hygeia

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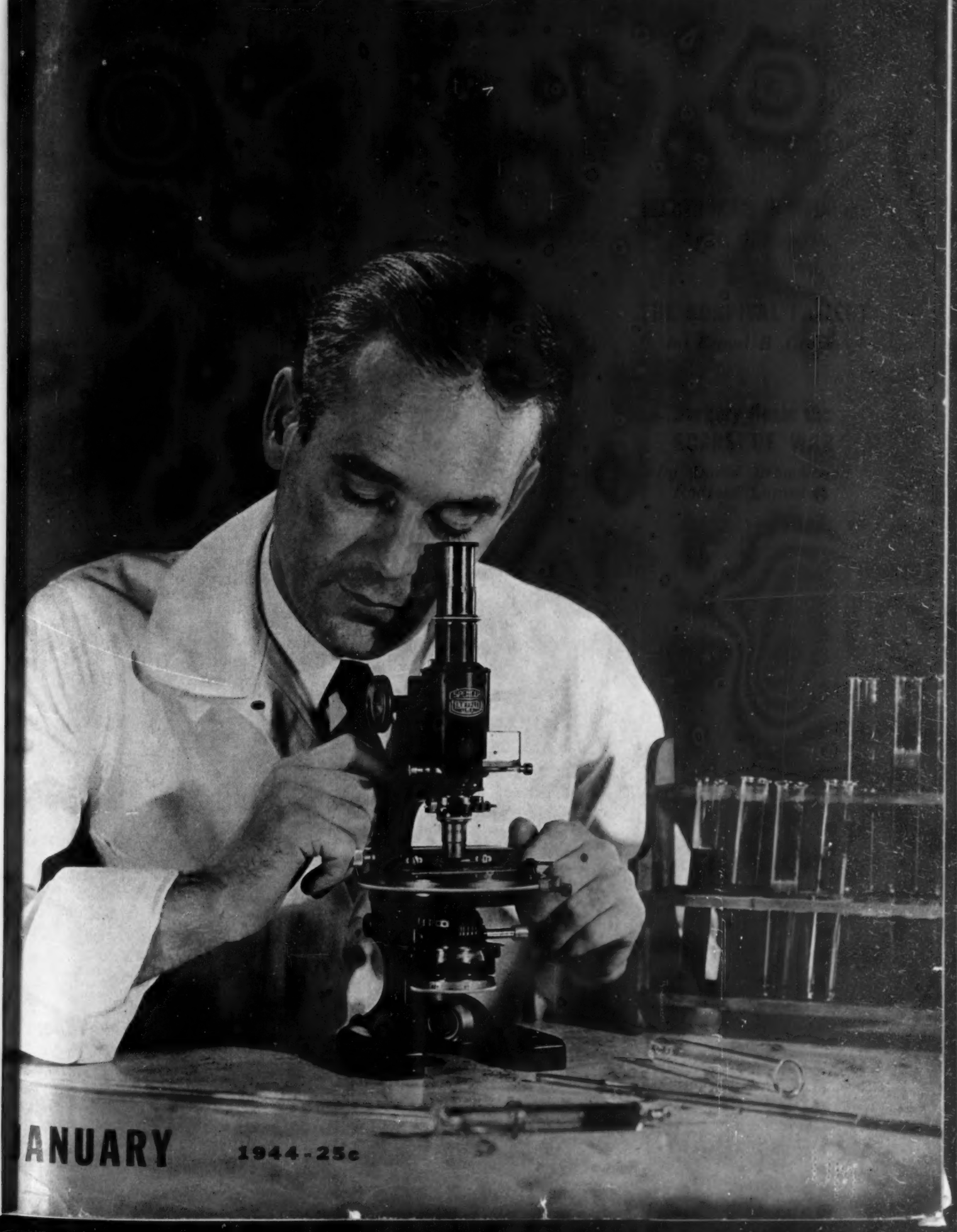

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EDITORIAL

THE USES AND ABUSES OF VITAMINS

WHAT we actually know about vitamins compared with the claims made for these substances, singly and in combinations, represents the antithesis between a brick and the pyramids. Such scientific, authoritative groups as the Council on Pharmacy and Chemistry and the Council on Foods and Nutrition of the American Medical Association, the Food and Drug Administration, and the Food and Nutrition Board of the Division of Biology and Agriculture of the National Research Council have stated succinctly the basic claims that may be made for vitamins.

A characteristic disease of the eye results from a deficiency of vitamin A; one of the first signs of its absence is night blindness. A deficiency of vitamin A sometimes results in hyperkeratosis, or thickening of the skin. The evidence offered as a result of a tremendous amount of experimentation did not seem sufficient to the Council on Pharmacy and Chemistry to warrant the claim that the giving of vitamin A to drivers of automobiles will diminish accidents from driving at night. Neither does the Council believe that the taking of extra amounts of vitamin A will prevent colds, influenza or other respiratory infections; nor is there proof that the taking of vitamin A in excess will prevent the formation of kidney stones in man.

Finally, the available evidence does not warrant the belief that vitamin A will help excessive action of the thyroid gland, anemia, degenerative conditions of the nervous system, sunburn or ulcerations of the skin.

The chief vitamin deficiency among Americans seems to be lack of thiamine (vitamin B_1). However, there is relatively little beriberi in the United States, the ultimate condition that results from lack of this vitamin. Thiamine is of value in correcting and preventing the loss of appetite that is apparent in many digestive conditions. Patients who get insufficient thiamine as a result of constant vomiting, tube feeding, paralysis of the muscles associated with swallowing or excess alcoholism may need extra thiamine given by direct injection. We know that excessive action of the thyroid gland, fever or vigorous muscle activity will use more thiamine than is ordinarily available, and that people under these circumstances need extra thiamine.

The most recently available evidence does not indicate any lack of riboflavin (vitamin G) in considerable numbers of Americans, nor is there any evidence that moderate shortages result in detectable symptoms.

Niacin, another of the B vitamins, is a specific in the treatment of pellagra. When given to such patients there is a disappearance of the symptoms related to the skin, the digestion and the nervous system. But unless the shortage of niacin is established, there seems to be no reason for giving extra niacin in all sorts of conditions related to the skin, the nervous system or the digestion.

Vitamin C is the anti-scurvy vitamin, but there are exceedingly few cases of scurvy seen in hospitals in the United States. There are evidences that dental caries, pyorrhea, certain infections of the gums, loss of appetite, anemia, undernutrition and infections are sometimes seen in patients in whom, according to mathematical laboratory studies, shortages of ascorbic acid do exist. It is important to prove the deficiency of vitamin C before overwhelming the patient with ascorbic acid, orange or tomato juice.

Much of the value of vitamin D is as a preventive of rickets. There can be no doubt of its value in the utilization of calcium and phosphorus. Nevertheless, the benefits, if any, to be derived from massive doses of vitamin D in arthritis or psoriasis still remain to be proved.

Vitamin E is the anti-sterility vitamin; that is, for rats. There is no indication that human beings benefit in the way of increased production by taking extra vitamin E. The claim of special benefit from vitamin E, or tocopherol, in amyotrophic lateral sclerosis has been shown to be without virtue.

Vitamin K, or menadione, is one of the greatest discoveries of medical science. Its use in obstructive jaundice, in hemorrhagic states associated with certain intestinal diseases and in hemorrhagic conditions in the newborn is accepted by scientific authority.

The abuse and promotion of vitamins, singly and in combination, are legion. The old-fashioned tonic which depended for its kick on its content of alcohol has been replaced by combinations of vitamins and minerals which depend for their kick on the psychologic stimulation resulting from professional advertising. Many a man in search of vim, vigor and vitality has found that benefits from such combinations are exceedingly transient. The somewhat caustic views of Westbrook Pegler in this regard speak for all of us. He says, "I have yielded from time to time to insistent urgings that I consume a few and I will give my own testimony that, contrary to the wheedlings of many earnest highpitch men, operating from the radio tailboard, they have never made the slightest difference in my energy or pep. . . . They make me feel no worse, but certainly no better."

Morris Fishbein

NONE of our institutions has had a greater burden put on it by the war than the hospital. Hospitals have been doubly hit. The war effort has drained staff members from every department, and at the same time the hospital must serve populations which are rapidly shifting. Recently, through personal experience, I have been able to see the difficulty of their task and the splendid way in which they are meeting it from the patient's point of view. Since many of my readers will need to go to a hospital during the war period, or will have relatives who must, it will be an advantage to them to understand the changed conditions under which hospitals must operate now.

A year ago I had to have an operation, which had to be repeated in part eleven months later. Unless skilfully performed this particular operation could be a serious ordeal, but in my case it was painless and left me with practically no discomfort. As a result, although I had to be in the hospital three weeks the first time and one week the second, I was free from any feeling of illness that would distort normal observation. I became convinced that it would be of benefit to anybody entering one of our hospitals to understand the conditions which now prevail.

No one in these days should lightly decide to go to a hospital. The American public for the most part has come to understand that the proper place for a sick person is the hospital. With few exceptions, this is true. Under the conditions prevailing at present, whether one should or should not go to the hospital is not for the family to decide but for the doctor who understands the nature of the illness, the care needed, the home resources and the situation of the hospital to which the patient is likely to go. If he decides on the hospital, some one should immediately make a reservation. Although I made mine two days in advance, when I arrived there was just one vacant room—in one of the largest hospitals in the Southeast! One must be prepared to take whatever room the hospital has that comes nearest to one's choice. To be fussy will merely waste the time of a busy official, and one's own energy.

It may take longer to get placed than it did in the past, because as soon as one attempts to register evidences of congestion appear. One may wait his turn patiently or impatiently, but wait he must. From the start of my second visit I was made to realize how greatly the burdens of the hospital had increased.

Judging from what I saw, there has been no letdown in the essential standards of hospital care. At least, that seemed true where I was a patient. Without a doubt, my hospital was more fortunate than some. It happens that it is connected with a university and that a considerable number of faculty members, particularly those belonging to the medical school, have wives who were previously nurses. These women, although they are mothers and housewives, have given a portion of their time to help the hospital meet its crisis. In my ward there were several well trained, experienced nurses who were helping out as volunteers. The hospital was again fortunate in that it drew from the university's student body another set of volunteers, and Red Cross nurse's aides helped out by carrying on some of the routines.

There is no sizable hospital in the country that is not now in need of as many part-time volunteers as are to be had—especially those who have been trained as nurses. It means a real sacrifice for the married woman to attempt the double task of keeping a home going and helping out an understaffed hospital, but no contribution could be more patriotic or more helpful in maintaining social morale during the wartime emergency.

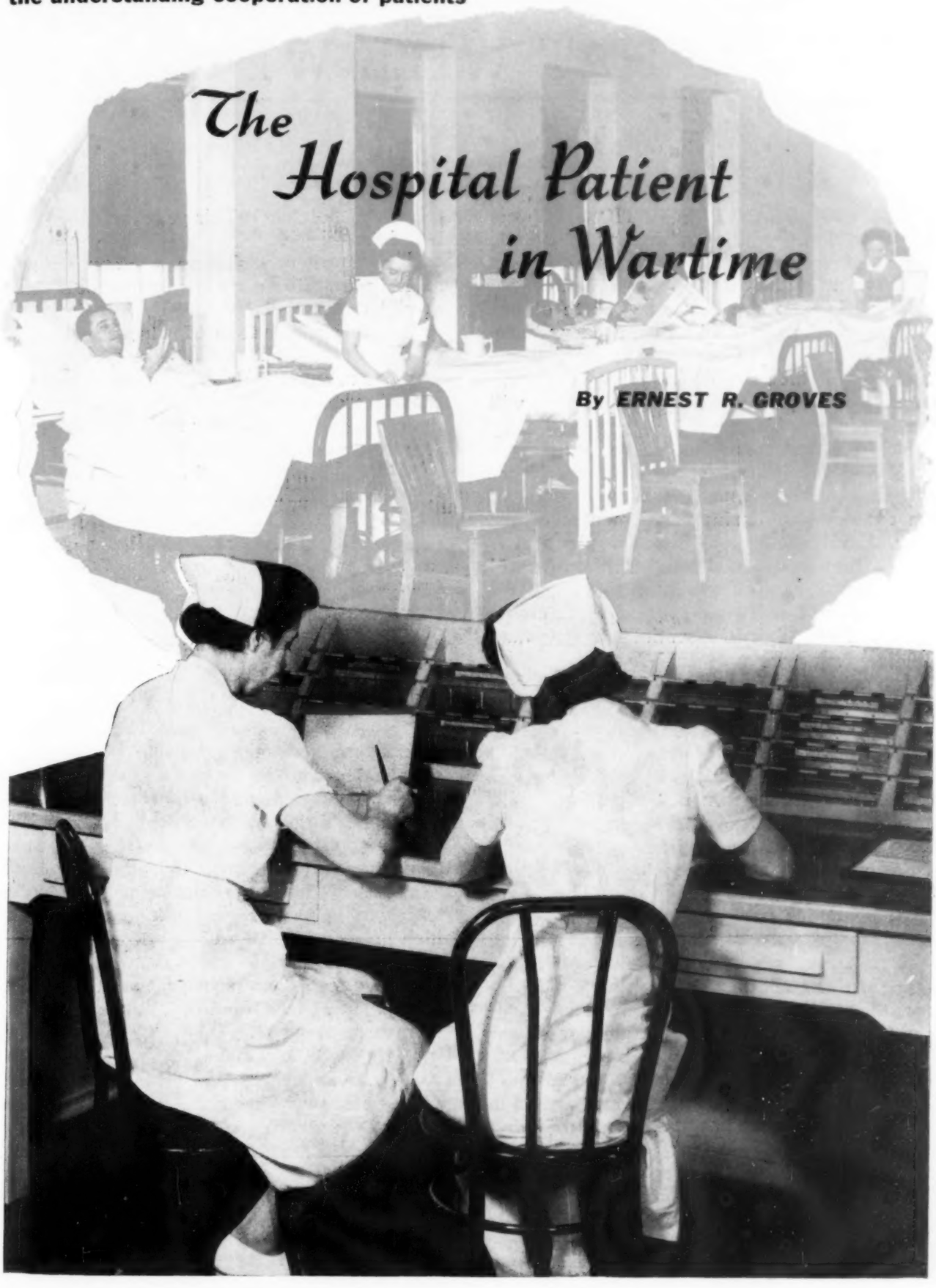
I had expected to find a lowering of standards for those in training, but so far as my experience goes this was not apparent. The greatest difficulty of the hospital appears to be in getting a sufficient number of orderlies and aids to do the cleaning, serving of food, gathering of trays and similar activities which, although highly important, do not require professional training. The demands of the Army and Navy and war industries in the city where the hospital is located have drawn away many of these former workers, and their replacement at wages that the hospital can pay is a problem.

Although hospitals are maintaining their standards of efficiency, no patient should assume that there has been no change and that if he is entering a hospital with which he is familiar the service will be just as he found it in peacetime. That will not be true. Especially will the difference appear to those who are convalescing or who are not seriously sick. There is a loss in many of the little things that in times past have lessened the monotony of the patient's experience and added to his contentment. The nurses rarely have time for conversation—the fellowship of patient and nurse. There are *(Continued on page 54)*

Wartime hospitals are short-handed, need the understanding cooperation of patients

The Hospital Patient in Wartime

By ERNEST R. GROVES



WHAT WILL WE EAT IN

By E. K. GUBIN

OUR CIVILIAN POPULATION will not go hungry this coming year, despite increased demands for food on the part of our armed forces and our allies. Even though slightly more than one fourth of our food production in 1944 will go to our fighting men and our allies, the remaining three-fourths will still be sufficient to feed our civilians adequately. Larger food production will make this possible.

This does not mean that civilians will have everything they want to eat at all times. There will be temporary shortages in some parts of the country and during some months of the year. Certain foods may not be as plentiful as before the war, for food is as much a powerful weapon of war as tanks or guns. Nevertheless, our 1944 civilian food supply on a per capita basis will be richer in essential nutrients than in the prewar years of 1935-39.

The net effect of smaller civilian supplies of such items as meat and some dairy products in 1944 will probably mean a national diet slightly lower in calories, animal proteins and calcium than we had in 1943. However, because of the higher levels of enrichment of bread and flour now in effect, the 1944 diet may contain more iron and more of the B vitamins.

Farmers have been asked to plant 380 million acres in 1944—16 million more acres than are now under cultivation. This appears to be a large increase, but food demands must be met as speedily and completely as weapon demands. In addition to supplying more to our allies this year, we will have many more fighting men to feed, some estimates running as high as 11 million men.

Men in the armed forces eat much more than civilians at home. The average civilian eats about 3¾ pounds of food each day, but the fighting man needs 5¼ pounds. Food figures of the armed forces clearly indicate the extent of this Gargantuan appetite. Last year, our military men *each month* ate 328 million pounds of meat, 34 million dozen eggs, 28 million pounds of butter and 221 million pounds of potatoes! This year the figures will be a third larger.

Cities swollen with war workers or near military establishments may suffer local shortages, but this will be due more to improper distribution rather than to actual shortages of food in the entire country. The seasonal production of food will also cause temporary shortages during certain times of the year, as indicated in the following table, but such seasonal differences have always existed.

SEASONAL DIFFERENCES IN FOOD SUPPLIES

	Supplies High	Supplies Low
Beef	Fall	Late Winter
Pork	Winter	Summer
Poultry	Winter	Spring
Eggs	Spring	Winter
Butter	Summer	Winter
Vegetables	Summer and Fall	Winter
Fluid Milk	Summer	Winter
Citrus Fruits	Winter	Summer

We are a nation of meat eaters, and the slightest suggestion of possible smaller meat supplies brings the immediate cry of "meat famine." Figures shown on page 15 indicate only a slight reduction in supplies of beef in 1944, and a total supply of meat about equal to past years. The meat that will move over the butcher's block may not be quite as tender as it was in past years, for there will be less high grade beef available. Favorite cuts will be harder to obtain. However, the meat in the butcher's shop will be just as nutritious as before. Meat is of the same nutritional value regardless of grade.

There will be large amounts of so-called variety meats available, such as liver, tongue, kidney and sweetbreads, because of the record slaughter expected and the inability of the armed forces to take *(Continued on page 43)*

There will be shortages in some areas at certain times, but on the whole America's food supply will meet nutritional needs adequately during the new year

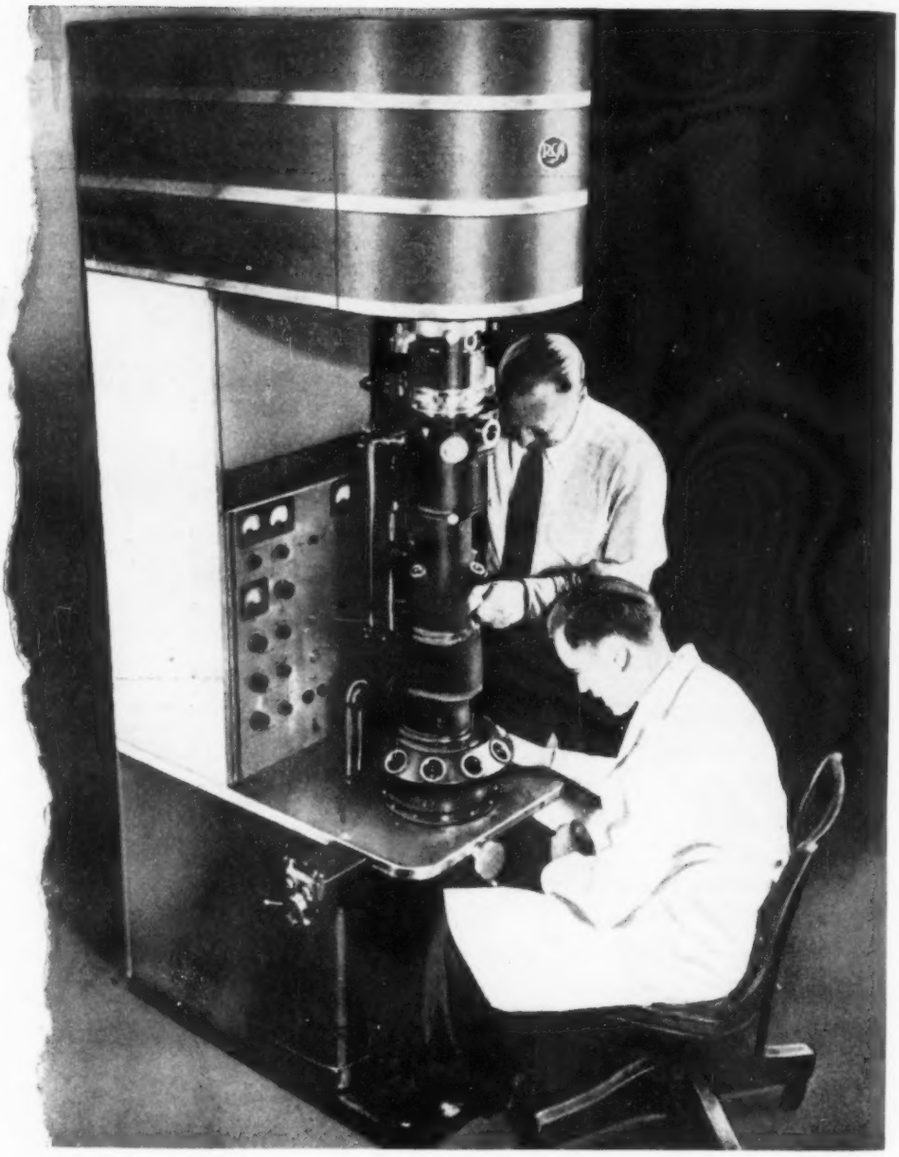
1944 ?

ESTIMATED MONTHLY PER CAPITA CIVILIAN SUPPLY OF FOOD IN 1944

Compared with Consumption in Preceding Years

FOOD	Average Consumption per Month, 1935-1939	Average Consumption per Month, 1942	Estimated Supply per Month, 1944
MEAT, POULTRY AND FISH			
Beef	3½ pounds	4 pounds	3½ pounds
Veal	½ pound	½ pound	½ pound
Lamb and Mutton	½ pound	½ pound	¼ pound
Pork	4½ pounds	4¾ pounds	5½ pounds
Total	9 pounds	9¾ pounds	9¾ pounds
Fish (fresh and frozen)	6½ ounces	6¼ ounces	6 ounces
Fish (canned)	6½ ounces	4 ounces	3¼ ounces
Chicken	1½ pounds	2 pounds	2¼ pounds
Turkey	3¼ ounces	5 ounces	4 ounces
DAIRY PRODUCTS			
Fluid Milk	10½ quarts	11½ quarts	12½ quarts
Butter	1¼ pounds	1¼ pounds	1 pound
Fresh Eggs	24 eggs	25 eggs	26 eggs
American Cheese	4 ounces	6 ounces	4 ounces
Evaporated Milk (tall cans)	1¼ cans	1½ cans	1 can
FRUITS AND VEGETABLES			
Potatoes (white)	10 pounds	9¾ pounds	10½ pounds
Fresh Tomatoes	1½ pounds	1¾ pounds	2 pounds
Canned Tomato Products	1 pound	1¼ pounds	1 pound
Fresh Citrus Fruits	3½ pounds	3¾ pounds	4½ pounds
Canned Citrus Fruits	4¼ ounces	6½ ounces	6½ ounces
Canned Fruit (including melons)	9½ pounds	7½ pounds	5½ pounds
Canned Fruit	1¼ pounds	1¼ pounds	1 pound
Leafy Green and Yellow Vegetables			
Fresh	6 pounds	6 pounds	5½ pounds
Canned	1¼ pounds	1½ pounds	1¼ pounds
Other Vegetables			
Fresh	4¼ pounds	4½ pounds	4 pounds
Canned	½ pound	¾ pound	1¼ pounds [1]
MISCELLANEOUS FOODS			
Lard	1 pound	1¼ pounds	1¼ pounds
Dry Beans and Peas	14 ounces	12 ounces	1 pound
Soybeans	...	...	3¼ ounces
Sugar	8 pounds	7½ pounds	6½ pounds
Rice	9 ounces	9 ounces	8 ounces
Wheat Flour	13 pounds	13 pounds	13 pounds
Tea	¾ ounce	½ ounce	½ ounce
Coffee	1 pound	1 pound	1¼ pounds

1. Includes canned soups, not carried in figures for other years.



Acme

The new electron microscope makes possible the extension of scientific knowledge in all medical fields. In this and other developments, the electronics engineer is now a powerful ally of the doctor

By A. G. MEZERIK

ELECTRONICS

WHAT HAPPENS in the modern physician's office when the doctor puts the electronic tube to work would have scared the paint off the old-fashioned, wand-waving medicine man. It isn't magic—but science—which does these new tricks. The result is better, too, for electronic medicine protects the health and promotes the cure of civilian and soldier alike.

"We must have a foolproof method for warning the pilot the instant he needs to call on his artificial supply of oxygen," the military and the doctors agreed. How to find it was the problem. The solution had to be an almost human instrument capable of noting changes in the pilot's physiologic processes and of promptly notifying him of danger.

Medical and engineering science cooperated in the search to determine the cause and extent of the muscular tensions which "froze" the pilot to his controls. To find out, scientists put the minute electron to work. Today, the flyer may wear a novel ear ring. It is an electronic photo tube which watches the color in his ear. The tiny light and pigmy photo tube are held to the opposite sides of the ear lobe by a spring clip. Long before the pilot becomes conscious that he needs more oxygen, the electronic gadget, a true lifeguard, signals to him over an amplifier that the time has come to turn on

the oxygen. This novel ear ring monitors a sound medical observation. The opacity in the ear lobe cartilage is changed by marked differences in the oxygen content of the atmosphere. The photo tube measures the amount of light transmitted through the ear lobe and automatically records the result. The pilot's ear ring is but one of many new developments in electronic medicine.

The modern operating room, whether in a city hospital or in one of our many well equipped base hospitals, may have in it almost as many electronic devices as a radio broadcasting station. Dust, as it enters the room through the air ducts, is electrically charged with a high voltage. The dust particles, including pollen, are drawn and taken out of the ducts to an oppositely-charged collector plate, as a magnet draws a pin. The operating table is illuminated by vapor lamps, under which the surgeon works day and night in artificial light rivaling the rays of the sun.

The operating field is sterilized electronically by an ultraviolet ray lamp which kills germs in the air released by a sneeze or brought into the room by a human being. The surgeon's deft hands may even make the incision with a surgical knife which has neither blade nor edges! This electronic device is a loop of wire or a needle which, while it cuts, sterilizes, coagulates the blood and seals the capillaries to prevent bleeding. The cutting operation is performed with high frequency energy. One terminal is grounded on the patient, while the other runs into the "knife" held by the surgeon. More than figuratively, the electronic

IN MEDICINE

knife is like directed lightning, striking precisely, though more slowly, since the speed is controlled under the surgeon's guidance. Already this new knife has revolutionized brain surgery, most delicate of all operations. Its use has eliminated the slow and painful application of silver clips to hold the wound together.

At military hospitals, an electronic metal locator will tell the surgeon exactly where, concealed under the skin, shrapnel or metal fragments lie. In New York City hospitals, the pin which little Johnny swallowed is located by this same electronic detective. Gone are the days when the surgeon made his incision and then started to search for the metal fragment. With the new locator, the surgeon moves a probe, about the size of a fountain pen, over the surface of the body. As the probe approaches the spot, the metal hidden in the body intercepts the searching electrons. Acting like a mirror, the unseen fragments cause a reflection which is registered on a meter equipped with a moving needle. The needle reaches its maximum precisely over the metal object, even though it may be embedded to a depth of 1½ inches. Recently a flying piece of metal became so deeply embedded in a riveter's eye that it could not be seen. The electron locator found it and saved the eye—as it has saved the blood and time of many a soldier on the battle fronts. The magic of the scientists' probe far outstrips the wand waving of the tribal medicine man who couldn't even have imagined this twentieth century wonder.

The nervous tension of war and of peace in present day living seems to aggravate the digestive organs and cause stomach ulcers. Electronic research has brought new understanding about these pesky destroyers of health. At Cornell University Medical College, scientists only recently succeeded in measuring the blood flow in the intact human stomach. Up to the time that electronics came to the scientist's aid it was impossible to do this, because the measuring instruments would have injured the organs.

The method used was dramatic. The patient swallowed a small balloon in which were six recording thermometers and a heating coil. The coil warmed the stomach tissues around the balloon. It was then possible to measure the flow of blood through the tissues, since a congested mass of blood would retain the heat. A sensitive photo tube, hooked to the thermometers, directed a moving pen which recorded not only the blood flow but the contractions of the stomach.

Some of the scientists' findings are surprising. Showing the patient appetizing foods or even talking about them produced a strong stomach contraction in thirty seconds and increased the blood flow in ninety seconds. Distasteful foods, whether talked about or displayed, produced no effect at all. Anxiety, tension and resentment caused a quick increase of the flow of blood and with it a decided stomach contraction. Fear and mental shock had the opposite reaction and decreased blood flow. All this was recorded by the working electrons, the better to enable every doctor to decide what to do for *(Continued on page 60)*

USING CLEANING FLUID *Safely*

By WILLIAM H. EASTON

A NUMBER of organic solvents are widely used in homes, offices and workshops for various cleaning purposes. They are useful because they possess certain special properties, but these properties also make them capable of causing serious injury if they are not properly handled. As is the case with many other household necessities, such as gas and electricity, the safe use of cleaning fluids depends on a clear understanding of their hazards.

These hazards are of four kinds. Some of the fluids are inflammable, some give off injurious vapors, some are harmful to the skin, and all are poisonous if taken internally.

Flammability is the most serious hazard to be considered. According to the National Fire Protection Association, about 200 people are killed and 1,000 seriously injured every year by fires due to the use of inflammable cleaners in American homes, to say nothing of the large property loss.

The commonly used organic cleaning fluids are arranged in accordance with their flammability ratings as determined by the Underwriters' Laboratories and indicated by the following numbers, which increase as flammability increases: carbon tetrachloride—0; turpentine—40-50; pure alcohol, ethyl and methyl—70; benzol—95-100; gasoline, naphtha and benzine—95-100. Carbon tetrachloride is nonflammable and nonexplosive, so that it presents no fire hazard.

Alcohol and the fluids with lower flammability ratings can be safely used in small quantities indoors if kept well away from any source of spark or flame, but when large quantities of these fluids are used, as in dry cleaning, the work should be done out of doors.

Gasoline and its related products are so highly flammable that they must never be used or stored in the home. They give off vapors that form explosive mixtures with air and can be ignited by any spark or flame; and, as these vapors may flow in an invisible stream as far as 200 feet from the point of use, they may flash back or explode on contact with a lighted cigaret or the pilot light of a gas stove in another room.

When and where conditions can be carefully controlled, these especially flammable liquids should be kept in approved safety cans and applied where there is no possibility of ignition. Special care must be taken to avoid the production of static electric sparks, which may be formed when the fluid is rubbed on fabrics or kid gloves or when it is poured from one metallic container into another.

Care must be taken to avoid inhaling the concentrated vapors of these fluids, because all the common ones mentioned above, except turpentine, are anesthetics, and some, on severe exposure, may cause more or less serious injury to certain internal organs.

With respect to the latter effect, the organic solvents have been divided into three groups by the toxicologist Flury. Pure ethyl alcohol is classed among the least harmful solvents. Its vapors may be breathed without injury in concentrations that are too low to produce dizziness or irritation of the eye, though this may not be true of some forms of denatured alcohol.

Benzol and methyl alcohol, on the other hand, are placed in the group consisting of strongly toxic and dangerous solvents. Severe

exposures to the vapors of these fluids may not only result in serious injury but, in extreme cases, may bring permanent disability—blindness, in the case of methyl alcohol, and blood and nervous disorders, in the case of benzol. Hence these fluids should be extensively used only under carefully controlled conditions.

Carbon tetrachloride is placed by Flury in an intermediate group. It may cause injuries to the liver and kidneys on severe exposure, but the body tends to regenerate the injured tissues, and complete recovery is the rule. In using small quantities of this fluid, as in spot removal, the work should be done in a well ventilated place. Large quantities, such as are needed for the dry cleaning of garments, should be used out of doors.

Gasoline varies in composition and may belong to any of Flury's three groups. The pure product is a simple anesthetic, but commercial gasoline usually contains added products that may make it toxic. Ethyl gasoline contains poisonous tetraethyl lead and should never be handled or used for any purpose except as a motor fuel. The vapor of turpentine is irritating to the respiratory tract, and prolonged exposure to it, as in cleaning a floor, should be avoided.

All the organic cleaning fluids will dissolve the natural oil of the skin, leaving it dry and leading to cracking and subsequent inflammation; but, in addition, prolonged or frequent contact with some may give rise to serious skin injuries. With respect to this hazard, cleaning fluids are arranged in the following order by Frieboes and Schulze, the least harmful being first: ethyl alcohol, methyl alcohol, denatured alcohol, carbon tetrachloride, turpentine, benzol and gasoline. None of these fluids should be frequently used to cleanse the hands of grease or paint; after contact with any of them, the skin should be gently washed with warm water and mild soap, and cold cream or a similar salve should be applied.

Because all organic cleansing fluids are poisons if taken internally, they should be kept where there is no chance of their being drunk by accident and where they are well out of the reach of children.

COMMONLY USED ORGANIC CLEANING FLUIDS

Gasoline: used as a dry cleaner and for dissolving grease, oil, wax, etc.

Naphtha, Benzine: petroleum products closely related to gasoline and used for the same purpose

Ethyl alcohol: generally used as a cleaner in its less expensive, "denatured," form. A poor solvent for grease and oil but useful for cleaning typewriters and other purposes

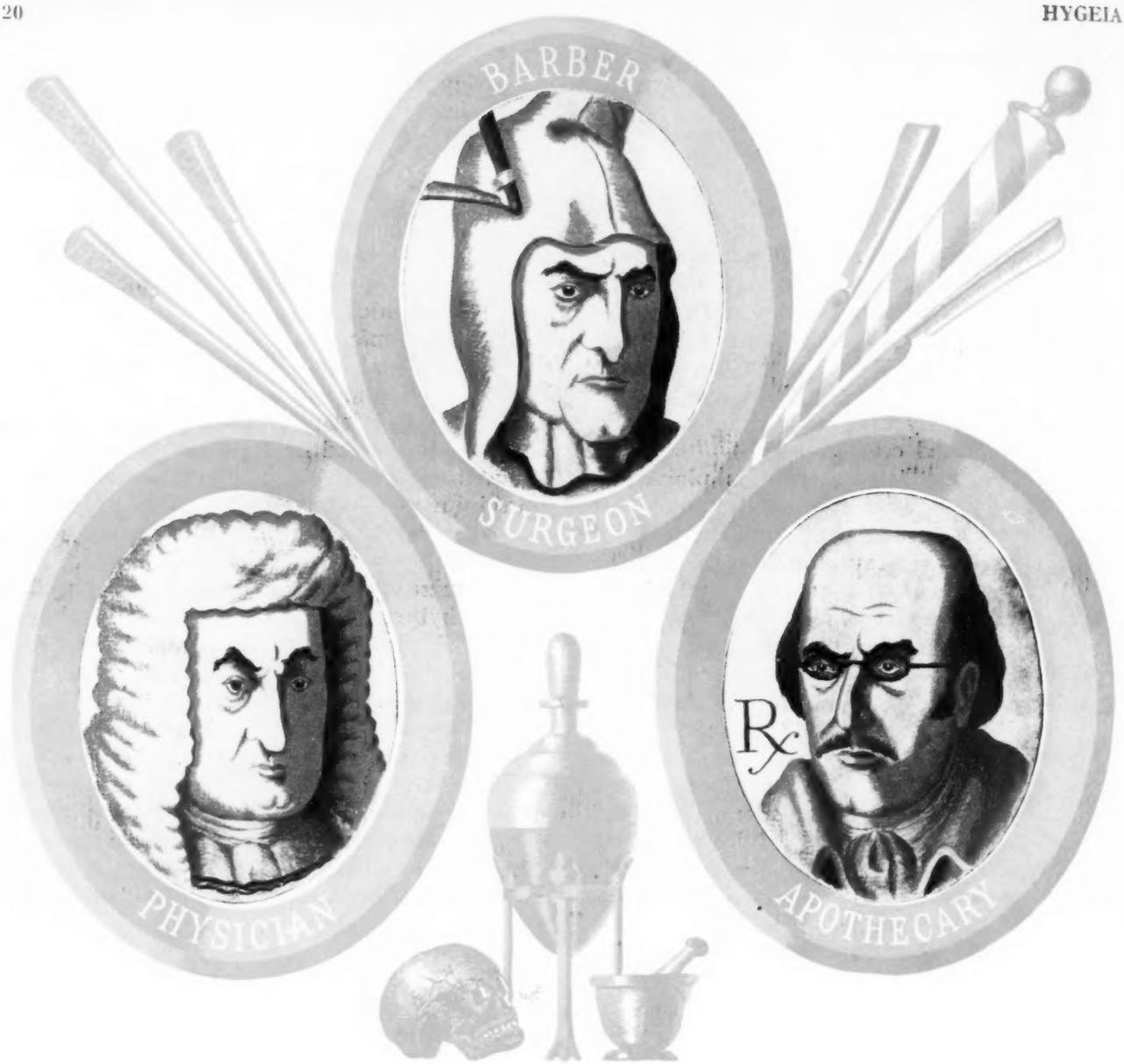
Carbon tetrachloride: sold under a variety of trade names as a dry cleaner and spot remover

Turpentine: chiefly used as a paint thinner and paint remover

Benzol: a coal tar product often called "benzene" but not to be confused with benzine. Widely used in industry, it sometimes finds its way into the hands of nonindustrial users

Methyl (wood) alcohol: sometimes used as a substitute for denatured alcohol

Paint removers: varying in composition but usually consisting of mixtures of the above or similar products



A Doctor Looks

AT ONE TIME, medical practice in the British Isles was carried on by the well known trinity of physician, chemist or apothecary, and barber surgeon. The relative importance of the members of this trinity varied from time to time. At an early period the physician and the chemist were important and educated, while the surgeon was lowly. We recall the picture of the well dressed physician with his gold-headed cane. Mischievous rumor declares that the medical purpose of the gold head was that it was to be inserted in the physician's mouth to prevent him from discoursing on matters of which he knew nought—to wit, all medical matters. The chemist was often a man of parts, even though his chemistry approached alchemy—partly through lack of general knowledge and partly no doubt through his obligation of compounding the physicians' prescriptions. The lowly surgeon at that time was not permitted to use the title "Doctor." He eventually got as far as "Mister." Today in England the surgeon prides himself that he is "Mr. Cutter," the surgeon, and will have none of the title of "Doctor." It was inevitable, even if unfortunate, that the chemist or apothecary did not in the passage of time remain in the trinity. The physician and surgeon have largely fused their interests, and the present day world accepts as quaint and unmeaning a medical school called the "College of Physicians and Surgeons," which is the title of the Medical School

of Columbia University, or a "Journal of Medicine and Surgery," or the "Medico-Chirurgical College."

But the changes of a developing civilization, great as they have been, are slight compared to the prodigious advances in medical science, largely in the last half century. Even a youngster finds that most of the so-called facts of medicine and nearly all its tools were discovered and developed after he graduated from medical school. We oldsters are out of breath trying to keep up with these prodigious advances. We can only shudder as we shut out the frightful vision of practicing medicine today with the sole equipment of what we learned in the medical school.

It is this circumstance of prodigious medical advance on which the American Medical Association was built. A patient may complain that it is a nuisance to have his doctor go to medical meetings. Actually, it is a necessity and a blessing to the community.

The American Medical Association educates its members—through meetings, exhibits, its many periodicals, its councils and its committees and in many other ways. Singlehanded, almost, it carried on a successful crusade for high standards for medical schools so that the doctor could receive a sound preliminary medical education (for that is what the medical school really is). Today a medical degree cannot be bought in this country. It must be earned by at least four years of study.

It would take too long to recite all the activities of the American Medical Association. And, it should be noted, the benefits of all these activities have been passed on to the public—

at Medical Economics

By ROGER I. LEE

the ultimate consumer. It is doubtless a good thing for the doctor if he is well educated, well equipped and up to date, but it is the public that really benefits.

The American Medical Association was performing and developing its scientific and educational functions vigorously and effectively, even though the pace of medical discoveries was far too hot for complacency and comfort. Then the world suddenly became social minded. The doctor was the original social worker, but his was the case method and he was an individualist. He looked through a microscope and an endoscope, not through a telescope. He gladly visited public hospitals without remuneration. He charged the rich, did not charge the poor or the clergy, and charged the school teachers something in between. Proverbially, he was a poor business man, and when he died none (or few) of his patients ever considered paying his estate.

With this trend an entirely new lingo developed. Socialized Medicine, a term which describes what the doctor has always practiced, now appeared as a sort of a slogan, meaning different things to different people. With this slogan appeared others: Medical Economics (Heaven save the mark!), Distribution of Medical Care, the Medical Rights of the Poor and of Low Income Groups, the Costs of Medical Care (which actually did not mean what it said but rather the Costs of Illness) and others. In reality, the doctor's bill is usually an "also ran" in sickness, where loss of income, hospital and nursing bills, and sundry other costs often readily outrun the doctor's charges.

The poor doctor found himself being pushed around. He wondered, in the dark days of depression and unemployment, for what purpose did medical science save all these lives that industry did not seem able to use?

He really thought he had done a good job. Our mortality and morbidity rates were the lowest in the world. No more typhoid, no more diphtheria, no more chlorosis, no more scurvy. Lobar pneumonia no longer a menace. Diabetes and pernicious anemia under control. The doctor soon discovered that even if the economists were poor in diagnosis and prognosis, certainly in regard to the depression, nevertheless the economists, quite undaunted, were versatile and vociferous regarding remedies for the depression and all other ills. To meet these changing times and trends, the American Medical Association began studies of the problems of medical service. The Association encouraged the doctors themselves to develop medical service plans on the insurance principle. Literally hundreds of plans appeared under medical auspices. These plans were carefully studied. *(Continued on page 78)*

This discussion was presented as a radio broadcast during a recent meeting of hospital administrators. Because it contains so much useful information for the average American family, HYGEIA has obtained permission to reprint it here. The script was written by Thaddeus E. Allen, with the assistance of the participants

your medicine cabinet

MR. ALLEN: Two experts are in the studio today to tell you what you should have in your home medicine cabinet. They are Miss Florence King, Administrator of the Jewish Hospital at St. Louis, Mo., and Mr. Robert S. Fuqua, Chief Pharmacist of Johns Hopkins Hospital, Baltimore, Md. Miss King, we didn't have all these modern things when you were a girl, did we?

MISS KING: Well, Mother's medicine cabinet had only two bottles in it—just two. One was a beautiful, red fluid which was known as "grandma's medicine," made from a recipe handed down from generation to generation. All us children loved it so we used to fake cramps in order to get it. Unfortunately it contained alcohol, and when Mother joined the W. C. T. U. she tore up the recipe and poured the medicine down the sink. The other bottle contained a home-made cough syrup which tasted so good that my brother and I used to sample it when mother went to market.

MR. ALLEN: I can remember the old-time medicine cabinet, too. How about the modern medicine cabinet? Mr. Fuqua, what should today's cabinet hold?

MR. FUQUA: The first thing you should have is a really safe laxative. After your doctor has picked the right one for you, he'll tell you that abdominal pain may mean appendicitis and that no laxative is safe for abdominal pain.

MR. ALLEN: What else should we have? We now have a good laxative—a good, old fashioned one. What should come next?

MISS KING: Let's not forget aspirin. In these days of rationing, when every housewife has a perpetual headache, it's good news that a woman can always reach for an aspirin tablet and get it. Most doctors agree that aspirin is the safest pain reliever, although pain is always a warning signal that something is wrong.

MR. ALLEN: Now that we have our laxative and our aspirin, and we have lost our headaches, we hope, what's the next item?

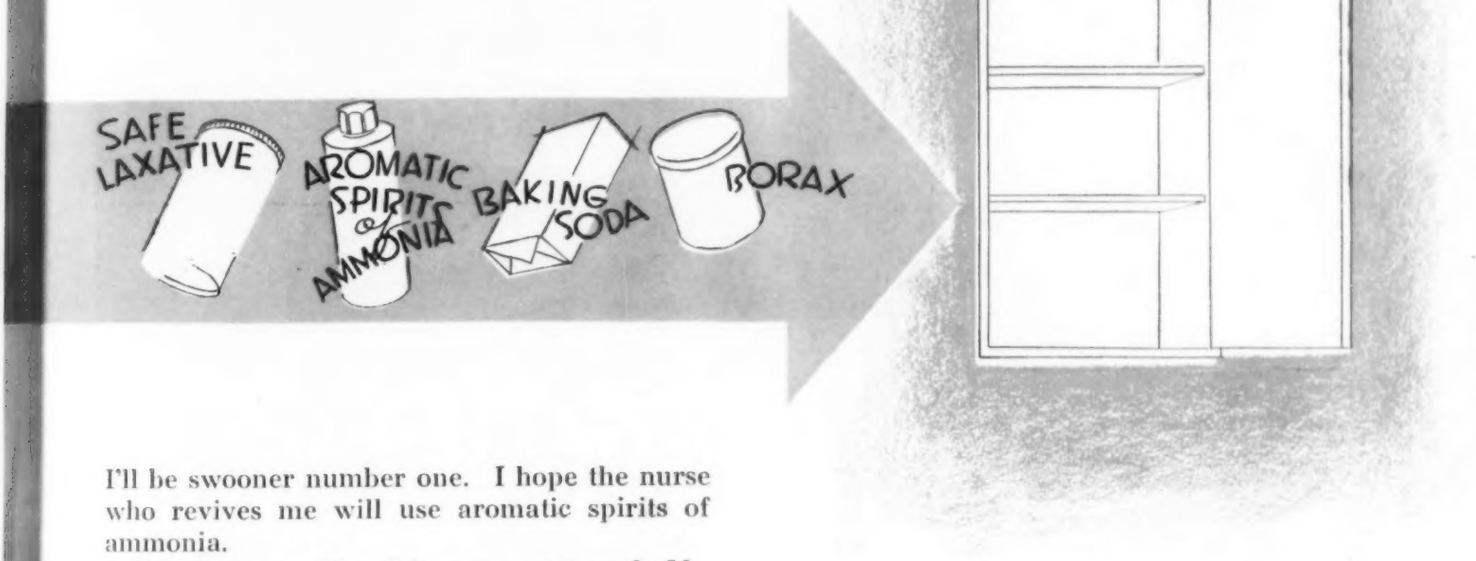
MR. FUQUA: If you have children you will need something to take care of bumps, cuts and skinned knees. Iodine is still a hospital standby, but it stings when applied. Other good antiseptics are painless and children do not fear them. You'll find that they prefer one that makes a big red spot, which they can

show to their pals. The bigger the spot, the bigger the hero.

MISS KING: Let's not forget that some folks put beauty aids in their medicine cabinets. This is a bad practice. I can recall a patient in the Jewish Hospital in St. Louis who took a dose of "anti-crow's foot lotion" internally. This resulted in a terrible tummy ache, and did the crow's feet absolutely no good!

MR. ALLEN: Miss King, you are supposed to be the busiest woman in St. Louis. Do you ever need aromatic spirits of ammonia?

MISS KING: I'm not the fainting type, but if the time ever comes when an employee of the hospital comes in without asking for a raise



I'll be swooner number one. I hope the nurse who revives me will use aromatic spirits of ammonia.

MR. ALLEN: Has this your approval, Mr. Fuqua?

MR. FUQUA: It has its place in the home medicine cabinet. It is standard—and safe. A few drops on your handkerchief is an excellent substitute for grandmother's smelling salts.

MR. ALLEN: In radio work, we are never supposed to cough. If I had a cough, what would you recommend?

MR. FUQUA: It might be better to see your doctor if you must relieve that cough quickly. Coughs come from many causes: your doctor will know what to do. Inexpensive cough drops or simple cough syrups will relieve the average cough—in time. Severe or persistent coughs may require the use of a potent narcotic drug.

MR. ALLEN: What's the next suggestion, Miss King?

MISS KING: If you are worried about a cough, don't forget a good, safe gargle. You might have a sore throat some time—the best people do. The carriage trade go for fancy colors and names, but if you are watching the pennies —the best people are doing that, too—the old familiar "cough syrup" will do as well as more expensive mixtures. If you haven't that, use table salt, baking soda, or borax (a teaspoonful to a glass of water) and avoid a more severe condition.

MR. ALLEN: We all know that illness today is a real danger to our war effort. Every day lost from the assembly-line delays victory. Is it true that bromides have their place in putting a worker on his feet?

MR. FUQUA: Any bromide should be taken very sparingly unless prescribed by your physician. State laws now prohibit the sale of the more dangerous sedatives to the public except on prescription.

MISS KING: I would like to put in a word for house cleaning your medicine cabinet. It needs a spring and fall going over as much as your living room *(Continued on page 58)*

The medical record room is the hospital's "intelligence department." Here are kept records of doctors' and nurses' observations, x-ray examinations, laboratory tests and all other services for patients

By M. G. WESTMORELAND

MEDICAL RECORD

SEVERAL THOUSAND years ago, possibly three thousand years B. C., the first medical record was written by Imhotep, physician to the Pharaohs. True, there were pictures of surgical operations left by cave dwellers long before Imhotep, but he was the first to create a complete medical record of a case of illness that has been preserved to this day. Because they kept adequate records of patients and studied them, the Greeks were more accurate in their prognosis or estimation of what the outcome of a disease would be. They were also able to study the effect of their treatments and, what was most important, to develop a science of diagnosis, the first step in the practice of modern medicine. Hence Hippocrates—the outstanding Greek physician—is called the father of scientific medicine.

Improvement is made constantly in the practice of medicine, and each step forward is associated with the study of patients' records and the correlation of these facts with other knowledge.

One of the basic reasons why the United States is recognized as the leader in medical education today is the emphasis placed on medical records. Today hospitals require complete medical records on all patients and employ experienced, trained personnel to be responsible for the care and study of these records. The importance of this work is demonstrated by the fact that although there are approximately 2,200 hospitals large enough to require full-time medical record librarians, in 1942 there were 3,426 employed in this capacity. In addition, 1,035 more persons devoted part of their time to the work of the record department. These figures presumably do not include numerous medical stenographers and nurses in hospitals who might assist the medical record librarian or attempt to perform her work if the hospital is not fortunate enough to have a full time librarian.

So much energy devoted to the medical records of hospitals in the United States must mean that great benefit is derived from this

Medical record librarians at work. The librarian must be a first rate stenographer, familiar with medical terminology. Note the girl at the left transcribing notes dictated by the surgeon following an operation

LIBRARIANS

work. The administrators of hospitals rely on the medical record librarians to furnish reports so that the hospital work can be appraised; to act as a source of information on medico-legal matters; to supply pertinent facts for certificates of health, birth or death; and to prepare necessary data for the various departments of the hospital. Physicians are also interested in the reports which are used to evaluate hospital work and at times appraise the work of individual physicians or collective groups of physicians who are members of the attending staff. All these functions are performed in the record room. Patients' charts are also studied for scientific purposes.

Suppose a physician wishes to make such a scientific study. He would probably visit the record librarian and might start by saying, "Miss Thurston, we have had some interesting discussions lately in staff meetings."

"Yes, Doctor, it is a pleasure to attend these medical conferences when the discussion is lively."

"Exactly. Now—to keep up this interest, I've arranged to have my interns study some of the common diseases requiring surgery. Suppose one of them takes appendicitis and the other takes gallbladder disease. The interns ought to emphasize the similarity of symptoms associated with the subject assigned to them and symptoms in diseases which must be ruled out before a diagnosis can be made. Then—what are the steps taken in this hospital to prove the diagnosis before operating?"

"I'm afraid every one doesn't use the same method of proving his diagnosis, Doctor. There might be several."

"That's just what I mean. The pathologist's report on tissues removed at operation will show up flaws in these various methods of making a diagnosis."

"Well, that ought to create some lively arguments on the subject. We will be glad to help in this study."

"Not too much help, this time. You see, this work is good training for the interns. But you might get, say, the last 2,000 records on appendicitis for one and gallbladder disease for the other."

(Continued on page 48)

Surgery Heals The Scars of War

By DAVID BROWN and RADFORD LUMSDEN

SOMEWHERE in Iceland an American Major miraculously crawls out from the burning wreckage of a cracked-up P-40. He is quickly removed to a base hospital. There morphine eases his agony and blood plasma frustrates shock. But although his life has been saved there's some doubt that it will be worth living. The flames which left his trim fighter ship a twisted mass of blackened metal have left him looking much the same. Half his nose is burned off; his mouth is seared and puckered to the size of a dime; he cannot close his eyes; his hideously scarred fingers look like an eagle's claws. Army doctors shake their heads as they schedule him for shipment home.

Fourteen months later, in one of the Army's big general hospitals, a tall, clean-cut young officer strides vigorously into the room. His face bears no noticeable evidence of the ordeal he has survived. He holds out his hand—a slender, perfectly functioning hand, practically normal in appearance—and makes us wince with the power of its grasp. "I sure like to shake hands," he says, smiling; "I never thought I'd be able to use my hands again." As the Major talks he gently, almost lovingly, flexes his fingers and gazes proudly at them. "And I'm going back on active duty tomorrow —to fly a B-17."

Sixteen operations were performed on the Major. His nose was filled out with cartilage taken from his ribs. The terrible scars on his face were removed, and his mouth restored to human shape by grafts from unburned portions of his body. Skin tissue shaved paper thin was used to build up his scorched eyelids. His palms and fingers were reconstructed with the aid of skin from his legs. His new hands, at first inflexible and stiff, were made pliable by electrical stimulation, by daily exercises and hydrotherapy—including the famous whirlpool treatment given infantile paralysis convalescents at Warm Springs, Ga.

The Major is but one of hundreds of officers and enlisted men to whom the patient scalpel of military plastic surgery has restored their God-given appearance. In the wards of Walter Reed, Bushnell, Valley Forge, O'Reilly and Letterman General Hospitals, where the Army's plastic surgery cases are treated, one can see spectacular and reassuring accomplishments of war medicine. New surgical technics and refinements of old ones now being developed at these centers, coupled with a War Department program that is training large numbers of plastic surgeons, will give America's wounded the best plastic surgery in the world. That is why, in this war, far fewer veterans will have the disfiguring scars and crippling deformities which made so many of the veterans of the last war a burden to society and to themselves. Indeed, the cases already successfully handled have convinced surgeons that an astonishingly small number of wounded soldiers, even though they may have lost a limb or an eye, need come out of this war in a condition which will seriously handicap them socially or keep them from earning a living.

An officer who lost his left ear in a Jeep accident was recently discharged with a new, living ear fashioned by army surgeons. A flap of skin was lifted on his scalp just behind where his ear had been. Then cartilage from a rib was cut and bent into the rough shape of an ear, and inserted under the skin flap. A month later, the flap, already a pretty good imitation of an ear, was raised into position. Skin taken from his abdomen was used to build up the back of the newly made ear and fill in the part of the scalp from which the flap was taken. Today it is not easy to tell which of his ears he was born with. Moreover his full hearing was restored when the surgeon made an opening into the ear canal that had been closed by scar tissue contractions.

Much of the credit for the triumphs of plastic surgery being wrought in army hospitals at home really belongs to medical officers on the battlefronts. Plastic surgery begins in the field, where our wounded receive superb emergency care from medical officers who have been taught how to treat wounds so that disfigurement is reduced and subsequent hospital care is shortened. Today medical officers serving in the front lines not only save lives but also conserve as much of each wounded man's own precious skin tissue as possible. Contrary to

Plastic surgery is saving thousands of wounded soldiers from invalidism and tragic, lifelong disfigurement

popular notion, skin tissue cannot be used for permanent transplants from one person to another.

Men with serious facial wounds often have badly shattered jaws. That is why army plastic surgeons work with dental surgeons near the field of operations as well as in the big general hospitals. Ingenious new splints make reconstruction of the jaw possible in cases that would have been difficult to treat in World War I. One of these is the Acrylic splint, a light mold which fits over the teeth. It is surprisingly comfortable to wear, and transparent, so that the plastic sur- *(Continued on page 50)*

Blood analyses give the doctor many facts which help him determine what's wrong and what to do about it

Your blood test

By MARY JANE KNISELY

FREQUENTLY, doctors and technicians who make blood tests find that the patient believes every one has either "good" or "bad" blood, and that the test simply determines which kind one has. Perhaps this misconception arises from an inaccurate use of the word "test." Actually, examinations of the blood are properly called "analyses." The possible results of such analyses are almost infinite in number.

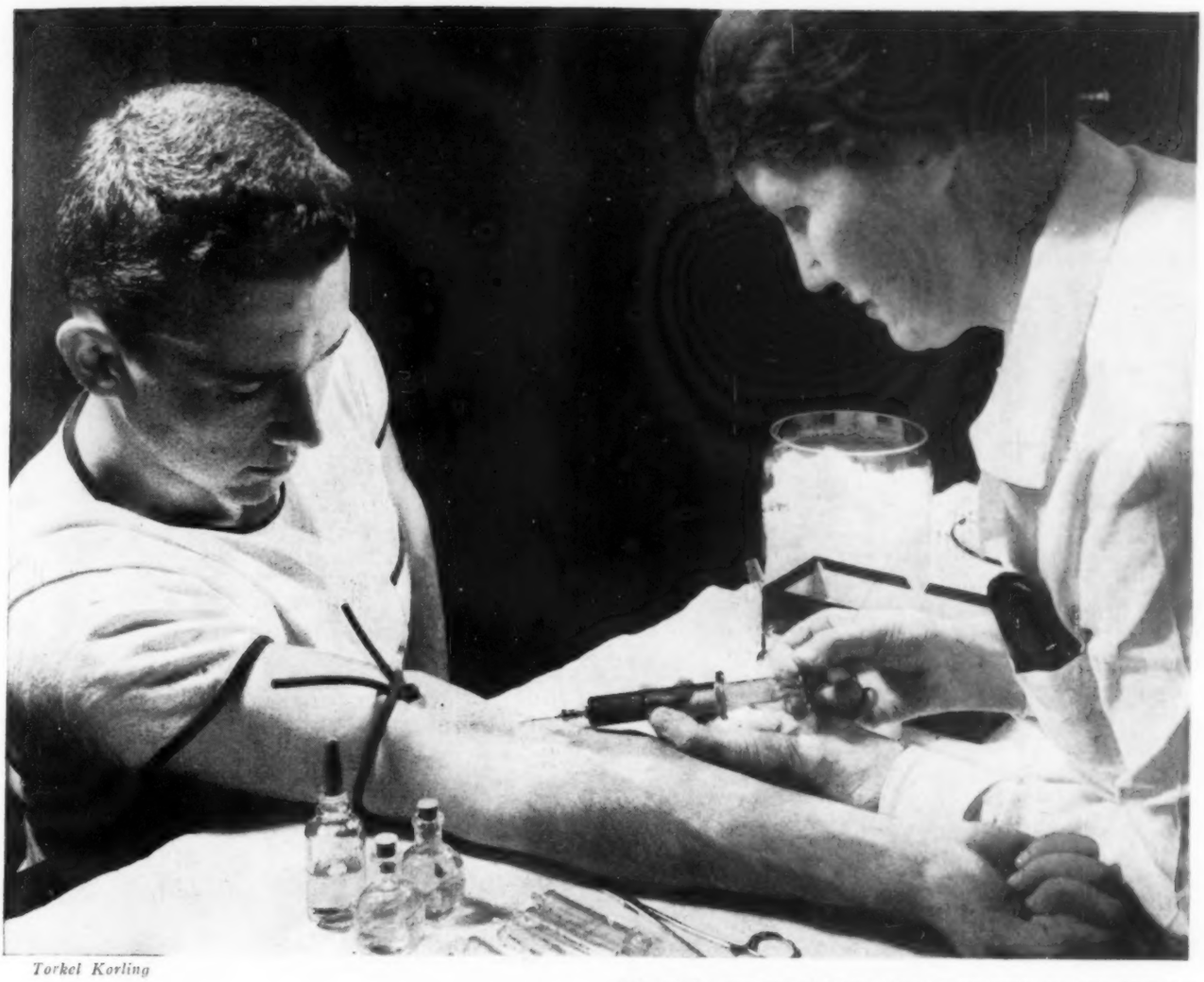
The blood stream is a complex system and a vital one. It is like a miniature railroad system, for it transports food, and oxygen to utilize it, to the body tissue and carries waste products away. It also does extra duty when the need arises—for example, the white blood cells are made in greater numbers by the body when an infection is present; the blood carries these white cells to the places where they are needed. This function is like the transportation of a miniature army to the battle front, for the white cells are soldiers with which the body fights disease.

A blood examination reveals the products which are in transit much as an inspector checks the cargo of a freight train. Sometimes the cargo cannot be unloaded, for one reason or another, and then the doctor must administer artificial help.

Sugar, for example, is a substance which is normally present in the blood stream. A supply is kept on hand to be available in any emergency. Through checking large numbers of normal people, medical science knows the limits between which the body maintains this normal level. In persons with diabetes, something is wrong with the unloading system; the sugar cannot get off the circuit, while the loading system continues to function. Just how much the blood stream is overloaded can be determined by a blood analysis, and the doctor can then administer artificial aid as needed.

As the blood flows through the normal kidney, wastes from protein foods are removed into the urine. But sometimes the kidneys become diseased and cannot do their work properly. In this instance it is the protein wastes which cannot get off the circuit, and again the loading system pays no heed. Chemical examination of the blood indicates the extent of the overload. Fortunately, our bodies contain more kidney tissue than is ordinarily used, and this extra tissue stands us in good stead in such an emergency.

Calcium, iodine, phosphorus, phosphates, potassium and chlorides are examples of inorganic chemicals normally present in blood. The usual amounts of these chemicals in the blood are known, and by determination of their levels in an individual case, the doctor may obtain a valuable insight into his patient's body chemistry. Too, certain enzymes—complex chemical compounds, such as amylase and phosphatase, constitute a part of the "unload-



Torkel Korling

Blood is removed from the large vein in the arm for the Wassermann or Kahn test for syphilis. These and other blood analyses are now a routine part of every physical and medical examination

ing system" and are normally found in the blood in known amounts. It is to the doctor's interest in some diseases to learn the enzyme level, since the action of these chemicals in the blood may affect body functions.

Sulfa drugs are much in use today in the treatment of infections. In low concentrations in the blood they are of little value, but on the other hand high concentrations may be toxic to the patient. If there is any doubt in the doctor's mind as to the advisability of administering more sulfa drugs, chemical analysis will show precisely the existing concentration in the patient's blood stream and thus safeguard the patient against possible ill effects from further treatment.

In such diseases as typhoid fever, diphtheria, pneumonia and others of bacterial origin, the body produces substances to combat the invaders. These substances are known as antibodies, and they are detectable, by proper analyses, in the blood stream. In the case of syphilis, this substance is known as reagin; it forms the basis for the Wassermann test for syphilis, with which the public is now familiar.

Sometimes parasites may be found in the blood. Malaria, for example, is caused by a parasite which enters the red blood cells. Trichina, or pork worms, may be found as they are journeying to the muscles to make a permanent home for themselves. In certain African regions, a common form of sleeping sickness is caused by filaria, a parasite with a thin, flapping wing, and these may be recovered from the blood during analysis.

Now that transfusions have become common, it is well known that there are four types of blood, the various *(Continued on page 69)*

Soul Medicine

FOR VETERANS

CENTURIES AGO, a library in Thebes had this inscription over the entrance: "Medicine for the Soul." The therapeutic concept of the Greek who inscribed these words underlies present day libraries in veterans' hospitals all over the United States. Today, this "soul medicine" is administered in proper doses of travel, adventure, biography, science and poetry by trained librarians in ninety Veterans' Administration Facility hospitals. These stations range in area from the one at Chillicothe, Ohio, with 2,805 acres of grounds, to the smallest, at Dwight, Ill., with a little over an acre and a half.

The first veterans' hospital library on record in the United States was in the Soldiers' Home at Togus, near Augusta, Me., just after the Civil War. But for years after that, reading rooms in veterans' hospitals were often merely collections of books, many of which were donated

because no one else wanted to give them shelf room. A neurotic patient might easily choose "Murder on Maniac Farm" or some such lurid title.

When World War I began, the American Library Association obtained permission to place librarians in Army camps. Caroline Webster was placed in charge of this work, field representatives were appointed over certain districts and librarians were selected. Through experiments previously carried on in McLean Hospital at Waverley, Mass., and the General Hospital in Boston, and the work done by the Iowa Library Commission, a few sound principles had been laid down for the guidance of librarians entering this new work. The therapeutic value of recreational reading, the advantage of carrying books to wards for bed patients and ways of interesting patients in reading had been discovered.

Books were the next problem, but there were responses from many sources and the work was extended to Army and Navy hospitals. There was little equipment at the beginning. Books were taken to the wards piled high on the arms of perspiring porters, in laundry baskets, rolled in on wheel chairs or piled on food trucks and trays when these were not in use. Then some one mounted a laundry basket on castors and attached a rope so that it could be pulled down the corridors. This inspired one patient, who designed a book cart with two large wheels and two small swiveled wheels for turning. It was hailed with joy by the busy librarians. Later, the cart was improved by placing the book shelves at an angle so that the bed patient could see all the titles instead of just the row nearest him.

Out of this American Library Association war service grew standardized libraries in Army and Navy hospitals. After the war this service, with all the equipment, books and personnel, was turned over to the Army, but the American Library Association continued to serve the Public Health Service for disabled veterans. When certain of the Public Health Service hospitals caring for war veterans were incorporated into the Veterans' Bureau in 1921, their libraries were absorbed with them.

It has been said that the three requisites of a good hospital library service are a trained librarian, books and a reading room. These are listed in the order of their importance from the hospital standpoint. A librarian knows the recreational, educational and inspirational value of well chosen literature, but the hospital librarian must also know its therapeutic value. Some idea of her training may be gained by scanning the course offered by the University of Minnesota for hospital librarians. The first three years are a regular academic course, the fourth is a library course, while the fifth is specialized work which includes courses in preventive medicine, mental hygiene, ethics of nursing, practice of medical social service, relationship of hospital to social work, book selection for hospital patients, therapeutic value of reading, mental conditions and literature of hospital groups. When this course is completed, the librarian realizes that the purpose of the hospital library is therapeutic—it is a definite aid in the readjustment and rehabilitation of the patient.

The librarian herself must have a pleasing personality, good health, a sympathetic nature,

Libraries in veterans' hospitals help to rehabilitate war victims. A reading room in veterans' hospital at Los Angeles is shown in the picture on the opposite page

By CORA L. KEAGLE

tact and the social service spirit which will make her interested in her patient. She must have an extensive knowledge of books, be willing to study the book reviews designed for hospitals and be able to discriminate between books for those physically ill and those suitable for the mentally ill. She must be willing to cooperate with physicians and hospital authorities. This is a big order, but visits to the libraries of a few Veterans' Administration Facility hospitals show that the order is being filled.

Good books are the second essential of the hospital library. There are many taboos. Books that deal with insanity, suicide, poisonings, degenerates, epileptics or deformities are out. Stories which deal with mistakes by hospitals, nurses and doctors are eliminated because of the effect they might have on patients, especially *(Continued on page 76)*

SHOULDER AND ARM EXERCISES

This is the third in a series of articles taken from the WAC Field Manual of Physical Training. Designed to help members of the WAC develop shoulder and arm strength needed in their strenuous routines, these exercises will be of benefit to civilians in all walks of life. Coming next month: Abdominal Exercises

HOW TO DEVELOP SHOULDER STRENGTH

EVERYBODY has muscles. Some women's muscles are weak and flabby—like rubber bands that have been around too long and lost their snap.

Other women have strong muscles—like fresh rubber bands, with plenty of stretch and pull.

Weak or strong, the length and thickness of rubber bands are about the same. And it's the same way with muscles. To be strong, you needn't have muscles that bulge. You need muscles with elasticity and tone—lithe, energy-packed muscles that get the job done quickly and efficiently.

To understand the muscles of your chest and shoulders, you must know what they are. The muscle in front of the chest is called the pectoralis. It joins up the breast bone, the collar bone, and the arms. Any work you perform in front of your body—jobs like lifting, pushing, reaching, driving, typing, stirring—would use the pectoralis. It must therefore be strong and firm, and when it is you'll notice a difference in your appearance. A firm pectoralis gives you a straighter line from collar bone to breast.

The muscle on the tip of the shoulder is the deltoid. It joins the arm to the shoulder. Every time you move your arms you call on your deltoid muscle. Whatever your job, you'll be using it all the time.

The muscles in the arm are called the biceps and triceps. When you bend your arm you use your biceps. To straighten it out you use the triceps. For carrying heavy objects or handling light objects over a period of time you rely on these muscles. No matter what you will be doing, well-conditioned biceps and triceps are important allies in doing your job.

How can you condition your pectoralis, deltoid, biceps, and triceps muscles? By the brief, simple series of planned exercises explained on the following pages.

What will these exercises do for you? First, they will systematically add to your strength and endurance.

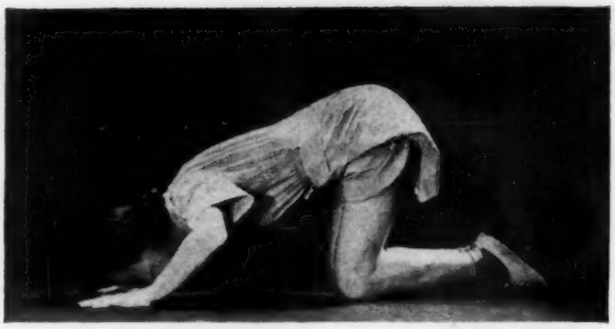
Second, they will improve coordination between these and other parts of your body, and between these muscles and the brain. You will work more easily and efficiently.

Third, they will give chest, shoulders, and arms a firm contour.

IMAGINARY PUSH AND PULL. Stride position elbows bent close to body, palms at shoulder height push slowly and firmly outward to full arm extension. Clench fists, pull arms back to starting position with same type of resistance. Avoid body movement. Use all muscles of arm and shoulder.

A **B**

PARTNER DIP. Assume position as in *A* above, heels of hands together, arms extended at shoulder height. *B* lowers herself by bending elbows and leaning from ankles. Keep body in straight alignment from head to heels while lowering. Return to position. Repeat. *A* is used only as a support for *B*.



ALL FOURS DIP. On hands and knees with hips directly above knees and shoulders directly above hands. Slowly bend elbows to permit the chin to touch the ground between the hands. No other part of the body should touch the ground. Keep the back flat. Slowly straighten the elbows to return to starting position. Repeat several times. To make the exercise more difficult, make the distance between the hands and knees greater and repeat the same movement making sure that the chin touches the ground between the hands. It is essential that you master this exercise—it is one of the most important in this series.

LEARN TO CONTROL YOUR BODY—

LET DOWN. In prone fall position, lower the body slowly to the ground by bending the elbows. Relax. Assume starting position by shifting weight back to knees. Straighten knees and assume prone fall position again, ready to repeat the exercise. Keep the body in a straight line while lowering. Do not allow the hips to sag. Work for as slow and controlled a descent as possible.

KNEE DIP. Lie face down on the ground with knees bent and feet up toward ceiling. Hands should be placed just outside the shoulders ready to push body up to supported position. Straighten elbows and push body up to a supported position resting on hands and knees. Slowly bend the elbows to return to the starting position. Repeat this exercise several times. Do not allow the hips to sag.

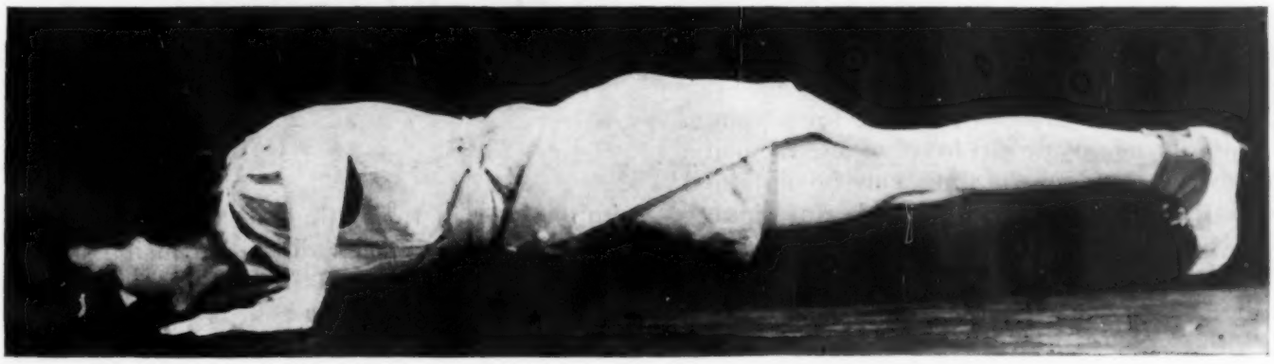
—HAVE IT DO AS YOU BID AT ALL TIMES

You are now reaching the point where it is important that you progress only within your ability to perform correctly. Much can be gained by thorough mastering of every exercise. Much will be lost by hastening the progress unduly and jeopardizing the accomplishment of the end result. You should now be well aware of the muscles involved in the performance of these exercises. It is not the ability to do *these* activities that is important to our work and your future; it is the actual muscle tone which is developed that will translate itself into your success in many other activities.

HALF DIP. Prone fall position, with hands grasping edge of chair, foot locker or shoulders of a person on all fours. Lower body slowly by bending elbows until chest touches support. Push back to starting position. Repeat. Begin by lowering only as far as possible, still being able to assume starting position in the form described above. Do not allow hips to sag nor knees to bend.

BE ABLE TO DO THIS EXERCISE

FULL DIP. Assume prone fall position. Hands should be at least shoulder distance apart and fingers may be pointed either forward or to the side. Lower the body very slowly only as far as it is possible to go and still return without relaxing, to the starting position. Repeat this exercise as many times as possible. Increase the distance of the dip more and more until it is possible to touch the chin to the floor and still return without relaxing to the starting position. It is important to keep the body in a straight line from head to heels and keep the hips from sagging when doing the exercise. Having once mastered the ability to perform a full dip correctly, work for an increase in the number of consecutive dips you can perform. This is the last exercise in the shoulder strength progression. When you have learned this series, you are ready to take up the abdominal exercises.



EVERY ONE is familiar with the meaning of the words "to be well born." The phrase means that one is from mentally sound, physically sound human stock—for several generations. This expresses an idealistic state. Actually, it is not humanly possible to be so "well born," but it certainly is a worth while guiding star for young people thinking of their future progeny.

In domestic animal culture during the past few decades many pure and remarkably perfect breeds have been evolved, yet when these pure-blooded animals are put on the treadmill of their life's routine or into the ordinary, necessary work of farm or city, often they do not stand up physically or nervously. In plant culture, too, wonderful specimens can be produced by skilled horticulturists, but these same specimens are difficult to keep true and to keep alive because of soil and pest difficulties. In animal life, then, a moderate mixing of breeds appears to be Nature's desire; while not so perfect physically, these "mixed" products are more viable, sturdier and really represent the survival of the fittest.

In human mating, an element is injected into the ideal eugenic plan which is not encountered in domesticated animals or plant life—the emotional concept popularly called "love." This element absolutely negates controlled mating of human beings. However, we must and should instruct our young people of the mating age to love with their heads as well as with their hearts, and always to be inquisitive as to physical and mental defects of their prospective mates' progenitors before matters go too far!

THE INFLUENCE OF EUGENICS

This is a most difficult problem for a young, inexperienced boy or girl to solve satisfactorily. However, some information can be obtained by intelligent observation and questioning about the industriousness and accomplishments of the various members of a prospective mate's family, and also about their general attitude toward life, their moral character, apparent physical health and mental and emotional stamina. These various traits and basic characteristics are all contained in the so-called "chromosomes" of the reproductive cells; no matter how beautiful or handsome the face and figure of the bearer may be, a bad strain may show up in the offspring. The venereal disorders are also to be guarded against. The ravages of these diseases are not contained in the chromosomes but are transmitted otherwise. Fortunately, we now have twenty states with premarital laws demanding a blood examination for syphilis before a marriage license will be given. Finally, we have here the beginning of legal recognition of eugenics. It is certain to spread throughout the land.

For a better understanding of eugenics and its dependence on heredity and environment, the question must be considered from a scientific angle. The nature of many human characteristics is determined early—even at the moment of conception. Others are determined later on, during the baby's development in the uterus. Differences in characteristics are due almost exclusively to different combinations and interactions of a material called the "genes." Some of these characteristics, for instance, are the color of the eyes and hair, the form of the features and numerous other physical peculiarities. Differences in health, stamina, mentality and behavior traits, on the other hand, though often due to a diversity of genes, are in many cases the result of differences in conditions under which individuals have lived.

The materials with which life begins are in the cytoplasm and the nucleus of the fertilized ovum, the product of the two parents. The so-called cytoplasm, the substance forming the body or bulk of the living cell, while of great importance in furnishing the growth impetus, has almost nothing to do with causing differences between persons. The nucleus, which is only a tiny speck in the cell, is the generating device. This contains a collection of various

By C. W. WYCKOFF

Ewing Galloway

Mating among human beings is based largely on the emotions, yet we must teach our boys and girls to evaluate hereditary factors

materials termed the genes. From 500 to 1,000 genes—all differing in different individuals—are in the nucleus of the cell.

Obviously, the fertilized egg cell is a tremendously complicated structure. The 500 to 1,000 genes are arranged in a very complex, but systematic, manner. They are grouped into orderly structures, called the chromosomes, which are held in the nucleus. The chromosomes are visible bodies under magnification. By their interaction, these diverse materials cause development. Many and varied combinations of the genes from the two parents may occur. One pair of genes from one parent may neutralize a similar pair from the other parent; one pair may augment the action of another; it may cause a blending, or it may dominate. In man, this set of structures called the chromosomes consists of forty-eight pieces arranged in twenty-four pairs. Each one of these pieces is again subdivided into an infinitesimal, beadlike arrangement. From this eternal chain of the past ages, a new human being comes forth, like and unlike his ancestors and fellow men.

As the original single cell (the fertilized egg) divides, the chromosomes, and likewise the genes, divide, and a part of each passes into every new cell produced. Thus in the later body every tiny cell has a complete set of genes which were present in the original egg. The various combinations of these different genes in each cell create a chemical substance which determines the future mission of that tissue cell—that is, whether the cell is to form bone, teeth, eyes, skin, brain or nerves. In fact, because of these genes each one of the microscopic tissue cells seems to have a soul and intelligence of its own. The human body as a whole is a wonderful, living machine. It starts from the union of the sperm and ovum, and from this one fertilized cell or egg, there develops all this differentiation into the various body tissues, then *(Continued on page 49)*

SHARP EYES

By E. D. TILLYER

EFFICIENT, well protected eyesight is essential for waging modern mechanized warfare—a fundamental truth recognized by American military experts even before Pearl Harbor. That's why the Army and Navy, in a move to conserve eyes and sharpen them for battle action, inaugurated plans for equipping our soldiers, sailors and aviators with special eye-protective goggles.

In record time new types of war goggles were designed. Fitted with special lenses, each type possessed certain properties suitable for different military purposes. Hundreds of thousands of these goggles have been made for our armed forces. Already they are protecting and making more efficient the eyes of naval lookouts scanning dazzling skies for enemy planes, sailors facing wintry gales and flying spray, ski troopers skimming along in a world of snowy whiteness, mechanized troops rumbling along in tanks and armored cars, and aviators flying miles up in blinding glare.

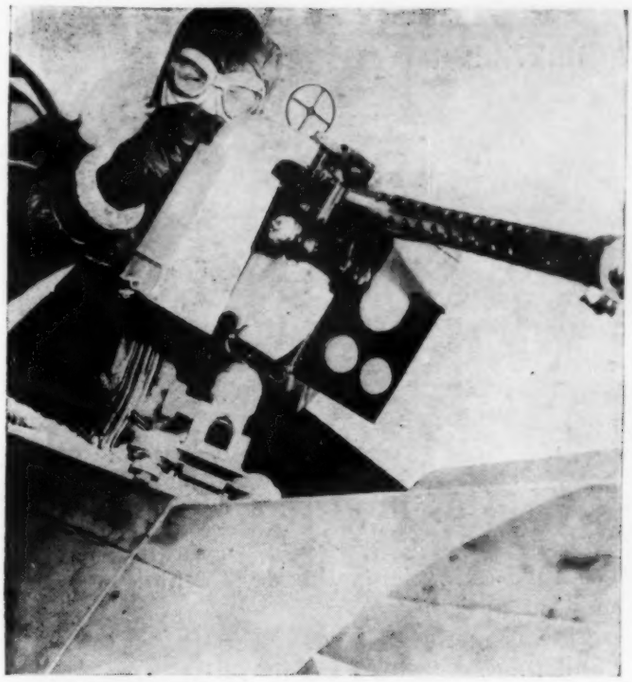
One of the goggles, fitted with glare-reducing glass lenses that absorb invisible ultraviolet (sunburn) and infrared (heat) rays, is used by the Navy for observation purposes and to spot enemy planes, particularly dive bombers obscured by the sun's rays. Another ingenious type is fitted with polaroid lenses which, in addition to filtering annoying reflected glare, can be rotated by hand to exclude as much light as desired.

Another goggle is made with clear, shatter-resistant plastic lenses, and these are worn by sailors exposed to cold weather, wind and flying water. A fourth type, for ski troops, is fitted with polaroid lenses which screen reflected glare and also the ultraviolet rays which may irritate the eyes and cause snow blindness.

For mechanized troops, goggles with shatter-proof plastic lenses have been designed, and these protect eyes against dust, wind and glare. A sixth type for Army and Navy fliers has precision-ground glass lenses which permit accurate flying, sighting and bombing. A seventh type for general outdoor use is the typical sun glass with glass lenses that reduce glare and absorb the invisible rays.

Lenses of a number of these specialized goggles are inserted into soft rubber cushions which fit exactly around the eyes. These rub-

Red lenses in these special pilots' goggles eliminate the waiting period formerly spent conditioning eyes for night flying



This aerial machine gunner sees clearly with special eye-protecting goggles absorbing ultraviolet rays

These sailors in the North Atlantic wear special clothing, face masks and cold weather goggles

ber masks protect eyes against blows as well as against dust, wind or water.

Manufacture of an interesting new type of military goggle with red plastic lenses to aid

for BATTLE

gunners in following the paths of tracer bullets to enemy targets in broad daylight was recently announced. The goggle helps gunners to estimate how close the bullets come to the target, and it also can be used to adapt pilots' eyes to darkness. The goggle is also made with clear, plastic lenses to protect eyes against wind and dust, with green plastic lenses to guard against the sun's glare, and with yellow lenses to brighten up targets on cloudy days.

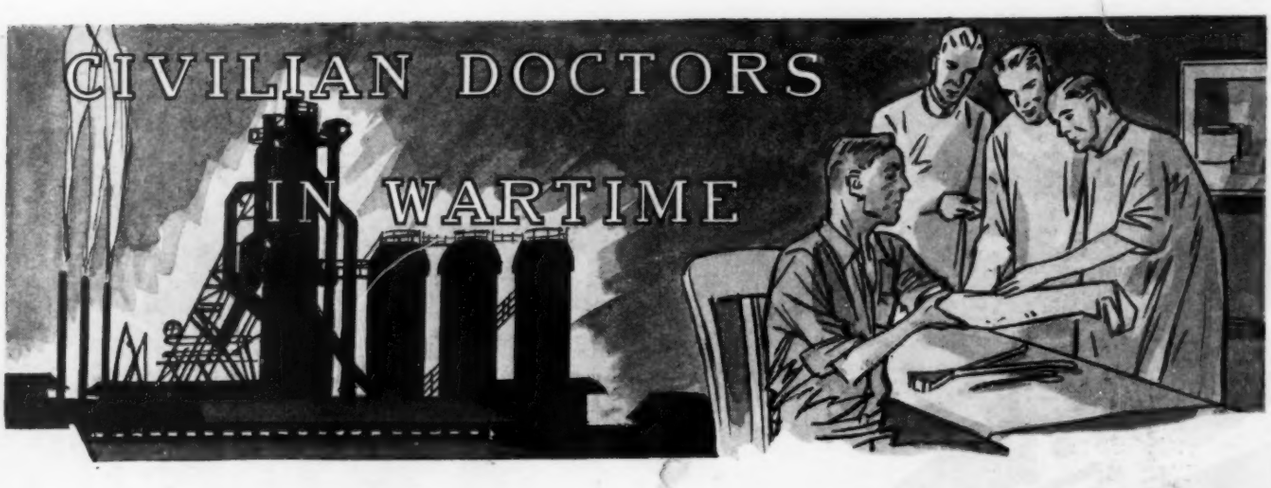
Modern global warfare such as we are now conducting makes enormous demands on eyes, far more so than in any previous conflict and such specialized goggles, scientifically designed and made, represent the solution to the visual needs of men in the service.

As the tempo of war has increased, the military demand for these goggles has kept pace, and plants manufacturing optical equipment have been taxed to capacity to supply the need. A recent editorial in the Boston *Post* explains why:

"Uncle Sam's soldiers are going to stay a while in tropic and sunny climes. No better evidence for this could be found than the shipment by the American Optical Company of 180,000 pairs of sun glasses, part of an order for a number of million pairs, for the United States Army. The big consignment, largest single shipment of sun glasses on record, filled 900 cases, or one whole railroad freight car."

In short, the sun goggle has gone to war—on land, sea and in the air, from Iceland to Africa, from Alaska to the South Seas. And these essential aids to military vision, according to reports from the front lines, are doing a magnificent job of protecting the eyes of those who see action. Here's proof. In a telegram addressed to one manufacturer's employees Rear Admiral E. L. Cochrane, Chief of the Bureau of Ships, states:

"You will be proud to know that goggles of your manufacture are seeing service aboard the *Enterprise*, the first aircraft carrier to win a presidential unit citation. She was the only carrier to get into action at Pearl Harbor and since then she has consistently been in the thick of battle. Your variable density goggles by giving sun protection to the anti-aircraft gunners helped the ship to weather numerous air assaults so that she is still afloat and fighting today. The crews of our men-of-war need more of your goggles of all types."



By ROBERT MARIS

IN a little mining town in the Middle West, three doctors—one recently returned to practice from retirement—are caring for several thousand people spread over an area of 300 square miles. The fact that the chief industry of the district is underground iron mining adds appreciably to the doctors' load, since occupational accidents are a constant threat.

Like the medical men who are serving in uniform with the armed forces of the United States all over the world, these doctors and others in similar American communities are carrying their full weight in medicine's effort to help win the war. The health of miners and their families and the health of the farmers, merchants and transportation workers who serve the mining community are as indispensable to all-out effectiveness as the health of soldiers and sailors and the treatment of war wounds. In this particular community, health is at an all-time high. The people are strong and well nourished. Mining superintendents and railroad men report minimal absentee rates. Infant and maternal mortality are low. There have been no serious epidemics of communicable disease.

Recently I had a talk with one of these mining town doctors while he was having a sandwich in his office at 7 p. m. It was his second meal of the day, hurried because there were twenty patients in the waiting room outside. We were interrupted twice in fifteen minutes as the night supervisor at the hospital called up to report and get instructions for the care of patients the doctor had operated on that morning.

"I was in the last war," the doctor told me, "and there's nothing I'd like better than to be back in uniform. I'd like to feel I was doing my part, you know. Then, too, there's the travel—adventure—new experiences.

"But I don't suppose I could leave these people," he nodded toward the closed door to the waiting room, "even if the local committee should declare me available, which of course they won't."

"At least," I suggested, "you can be with your family, as long as you're here at home."

"Sure," the doctor agreed. He flipped over a page or two of the calendar pad on his desk, seemed about to speak, but apparently changed his mind. Later, I found out what he was probably thinking. His daily schedule, I found out, included three or four operations every morning—sometimes more; office hours at noon; then house calls in widely scattered mining locations and rural homes. Office hours again every evening, and a final checkup visit to the hospital, usually around midnight. Then, unless he was called out, he could go home and sleep until 6 o'clock. Sundays, he took it easy—no midday office hours.

"How many doctors have left from the district here?" I asked as the doctor finished his sandwich and brushed the crumbs off his desk.

"Only one," he replied. "Younger fellow. But we were all busy—even before the war—and the population of the district has been increasing rapidly for the past year or two. All the mines are working full time. Shipping more and more ore out of here every month," he added with pride. He buzzed for the girl outside and walked *(Continued on page 42)*

Special apparatus has been developed at the Hudnut Institute for Dermatological Research to study preparation of emulsions and viscosity

Only the Best May Serve the Fair

THE Hudnut Institute for Dermatological Research brings together a group of highly trained people who represent all the sciences related to cosmetic research.

Working in individual fields of specialization, this staff devotes its time to investigation of the chemical and physical properties of alternative materials, the exploration of the potentialities of new ingredients, and the study of such vital related problems as those of allergy and sensitization.

To the consumer, the work of the Institute means that beauty preparations by Richard Hudnut not only enhance personal attractiveness, but are as harmless as the resources of a scientific laboratory and skilled manufacturing methods can make them.

While we are gratified by the fact that many ingredients first developed by cosmetic research are now also being used in pharmaceutical preparations for the skin, our primary purpose is to make Richard Hudnut preparations that are dependable as well as efficient ...so that beauty may be safely bought.

We invite you to write for our free booklet, covering the work of the Institute in greater detail. Address: Professional Service Division, Richard Hudnut, 113 West 18th Street, New York 11, N. Y.

RICHARD HUDNUT

113 WEST 18TH STREET • NEW YORK, NEW YORK

PNEU-MO-COC-CUS
is a treacherous fellow
(... and this is his best hunting season!)

PNEUMOCOCCUS is the germ that causes most cases of pneumonia.

He is a skillful hunter, preferring the cold winter months when people are less able to ward off his attacks.

Sometimes Pneumococcus strikes people who are in excellent physical condition. But he really goes to work with glee on someone whose resistance has been weakened—perhaps through overwork, poor nutrition, or insufficient exercise.

He enjoys good hunting in stormy weather, stalking people who aren't dressed warmly, or whose clothing or shoes are soaked. Even better, he likes to shadow someone who has influenza, a severe cold, or a cold that hangs on. Such infections of the nose, throat, or lungs help him start a full-blown case of pneumonia.

Once you learn these wily habits of Pneumococcus, you can take the obvious steps to avoid his attack.

If, in spite of precautions, he should press home a successful attack, *quick action is necessary!* Any of the following signs of early pneumonia are an urgent warning to call the doctor *immediately:* A chill, followed by fever ... coughing accompanied by pain in the side ... thick, rust-colored sputum ... rapid breathing.

In most cases of pneumonia, the doctor has a powerful weapon in the sulfa drugs. In some cases, serum is still used effectively. The earlier treatment is started, the better are the chances of hastening recovery and of preventing serious consequences.

Sometimes when pneumonia strikes, Pneumococcus is not to blame. The cause may be a germ or a virus against which sulfa drugs and serums are not effective. *In such cases, prompt medical and nursing care are particularly important, for recovery depends upon general care.*

During the "pneumonia months" the wisest course is to keep fit ... to avoid colds ... to take care of a cold should one develop. If a cold is very severe or hangs on, *go to bed ... call the doctor!*

For more information about pneumonia, send for Metropolitan's free booklet, 14-Z, entitled, "Respiratory Diseases."

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Metropolitan Life Insurance Company

(A MUTUAL COMPANY)

Frederick H. Ecker,
CHAIRMAN OF THE BOARD

Leroy A. Lincoln,
PRESIDENT

1 MADISON AVE., NEW YORK 10, N.Y.

Civilian Doctors in Wartime

(Continued from page 40)

with me to the door of the office.

"A few months ago, I went so far as to ask about getting a commission in the Army," he said a little apologetically, "but they told me I was essential." We stood looking at the crowded waiting room—men in working clothes, women with babies, young people, old people. They all looked up eagerly as the doctor appeared in the doorway. He greeted several by name. "How's the leg?" he asked one man who got up and moved toward the inner office.

"Fine, Doc, fine!" the man said. "Back to work Monday," I heard him say as he went inside. The door closed, and I left.

No single group in the United States has contributed a larger proportion of its membership directly to the armed services than has the medical profession. Thousands of physicians are serving their country in uniform today—examining draftees at induction centers; treating disease at station hospitals here and abroad; performing operations to save lives on board ship and in casualty stations within range of enemy gunfire; scientifically planning for the provision of food, water and sanitation facilities for troops to guard against epidemics.

But thousands of physicians remaining at home are also serving their country, uncomplainingly assuming the burden imposed by the absence of their associates gone to war. In rural districts like the one described here, in cities, industrial centers and farm communities, American doctors—often at the sacrifice of health or hard-earned rest—are shouldering the responsibility for keeping the nation healthy. When the nation's war heroes are counted, these doctors should be included.

PRIVATION IN THE PLAYROOM

The present scarcity of toys
Is not much loss to little boys—
Who still can find the height of glamor
In any life-size saw or hammer.
It's the fathers whom it pains—
This shortage of electric trains!

—Virginia Brasier.

What Will We Eat in 1944?

(Continued from page 14)

their proportionate share of these meats. These items are highly nutritious and comparatively inexpensive. Hearts and brains give large quantities of protein and vitamin B_1 and B_2, while kidney is an excellent source of protein, iron and vitamins A, B_1 and B_2. The nutritional value of calves' liver is well known.

Pork will be more plentiful than in past years. Civilians should make greater use of the pork livers which will be abundant this year. They are truly nutritious—a low cost source of protein, iron and vitamins A, B_1, and B_2. Equal in food value to calves' liver, pork livers are also much cheaper.

Seasonal conditions, as indicated on page 14, and distribution difficulties, will result in smaller meat supplies in certain areas. The Far West and the Northeast will suffer a temporary shortage of beef early in the year. The same will be true of areas with war-swollen populations. Pork supplies will be smaller in the West during the summer, but supplies of lamb will be plentiful then. Poultry, an excellent substitute for meat, will be abundant except in the spring. Eggs will be plentiful, except during the winter months.

Supplies of fluid milk in 1944 will depend on a number of conditions which, if extremely favorable, will give the per capita supply estimated on page 15, but if unfavorable will result in a lower figure than in 1942. More dairy cows will be needed to reach the estimated 1944 figure, and individual production of milk will have to be exceedingly high. Lack of experienced help and shortage of feed in some areas may make it difficult to meet this figure. The importance of milk in diet, however, makes it essential that all preferences be given dairy farmers.

Sufficient lard will be available, but butter will continue to be short throughout the year, with the pinch most noticeable in winter.

Supplies of fresh fruits, with the exception of oranges and grapefruit, will be short. So will melons. Canned fruits will be scarce.

Fresh vegetable supplies will be slightly smaller, with the ultimate supply dependent on weather, railroad transportation and farm labor. Potatoes will be plentiful. The supply of canned vegetables will be smaller. Victory gardeners who canned some of their 1½ billion dollar vegetable crop of 1943 will not suffer as much as others.

Increasing use of soybeans in various forms will be of great help in fortifying diets and substituting for scarce foods.

Lack of sufficient farm help, farm machinery and transportation to market may change a number of the 1944 estimates, but government agencies are attempting vigorously to solve these troublesome problems.

Whether or not the 1944 supply of food will be as large as estimated, the American public will have to change some food habits and check every source of food waste. Even though the average civilian does not eat as much as the average soldier, still he will eat better in 1944 than he did in prewar years. Having more money in his pocket from full employment at higher wages, he can now afford to spend more for food.

While the military man comes first in allocation of food, the home front fighter is not forgotten, and under present allocations the average civilian will have plenty of nourishing food to meet his needs in 1944.

THE BUSINESS OF GETTING WELL

can be fun . . .

The first two weeks of his illness *Marshall Sprague* was so sorry for himself that he nearly died. Then he made the electrifying discovery that he was a really free man for the first time in his life, and that THE BUSINESS OF GETTING WELL can actually be a glorious adventure. "It works."—*N. Y. Times Book Review.*

THE BUSINESS OF GETTING WELL

by MARSHALL SPRAGUE
Ill. by ERVINE METZL **$1.75**

THOMAS Y. CROWELL COMPANY
432 Fourth Ave., N. Y. C. 16

Your child MUST have IRON for good red blood

Children's iron needs grow along with their bodies!

BRER RABBIT MOLASSES IS RICH IN IRON

There's extra iron in every cooky made with Brer Rabbit Molasses. So keep plenty on hand!

● Children love the flavor of Brer Rabbit Molasses. **Tests have shown it is second only to liver as a rich food source of iron the body can use.**

3 tablespoons of Brer Rabbit Molasses supply about a third of minimum daily iron requirements based on government standards. One tablespoon of Brer Rabbit in a glass of cold or warm milk makes a delicious, iron-rich drink.

TWO FLAVORS:
Gold Label—light, sweet and mild-flavored.
Green Label—dark and full-flavored.

FREE PENICK & FORD, LTD., INC., New Orleans, La., Dept. HFI-4
Send me—free—Brer Rabbit's "Modern Recipes for Modern Living," containing 116 fine molasses recipes. Also pamphlet on children's iron needs.

Name_____
(Print Name and Address)
Address_____
City_____ State_____

By FRED L. ADAIR

FOOD VALUES OF THE EGG

EGGS are a perishable food of high nutritive quality. In its prime, the egg is a delectable, costly food. Its nutrient value is derived from its quality and the diversity of its components. Its average weight is about 0.1 of a pound. The energy value is about 75 calories—with 64 of them contained in the yolk. Eggs have an acidifying effect comparable to beef. They are 13 per cent protein of high quality, about equivalent to that of pork sausage and that of white flour, macaroni and spaghetti. The fat is about 10.5 per cent, or less than half the proportion in beef tongue and about one third that of pork chops. Egg contains no carbohydrates. The amount of ash or mineral is 1 per cent by weight—or a little more than whole milk. The percentage of calcium is 0.67, and of phosphorus 0.18—over half the percentage of calcium and nearly twice the proportion of phosphorus found in milk. The percentage of iron is twelve and one-half times and of copper ten times that found in milk.

If one compares two eggs, or about 100 grams, with 100 grams or about 3.2 ounces of milk, the caloric value of the eggs would be over twice as much. Milk contains 5 per cent of carbohydrate in the form of lactose; 3.3 per cent of protein, or about one fourth the proportion of that in eggs; and 4 per cent of fat, or more than one-third the proportion in eggs. The vitamin content of neither food is constant, but eggs contain no vitamin C, compared to a small amount in milk. The average vitamin content of 100 grams of egg and 100 grams of milk is shown in the accompanying table.

If the average daily caloric requirement of man is taken at 2,500, one would have to eat thirty-three eggs per diem or to take about 4 quarts of milk daily to meet the requirement with these foods alone. Neither of these would make up a well balanced diet. Thirty-three eggs would supply over 200 grams of protein, or about three times the daily requirement. If the 4 quarts of milk were taken there would be an excess of fluid, but the 130 grams of protein would be about double the average requirement. There would be excess of minerals in the milk diet but deficiencies in vitamins, notably B, C and D. It is apparent, however, that milk would more nearly meet the human requirements than eggs. It is also obvious that one could supplement the one with the other. Two eggs a day would supply 13.4 grams of protein and 153 calories. One and one-half quarts of milk would adequately supplement the protein requirements up to about 60 grams but would only bring the total calories up to about 1,140, which is less than half the requisite amount. It is again apparent that reasonable amounts of both foods would not provide a well balanced diet.

COMPARATIVE VITAMIN CONTENT OF EGGS AND MILK

	Vitamin Content	
	100 grams of eggs	100 grams of milk
Vitamin A	1,000 I. U.	200 I. U.
Thiamine	260 micrograms	30 micrograms
Ascorbic acid	.....	2 milligrams
Vitamin D	.....	2 I. U.
Riboflavin	520 micrograms	180 micrograms

Two eggs furnish the protein equivalent of over 13 ounces, the vitamin A equivalent of about one pint and the caloric equivalent of about one glass of milk. One egg a day, which is the individual person's share of the total egg production, supplies about one tenth of the protein requirements, about one fifth of the vitamin A needs but only one thirty-third of the daily energy essentials. It helps to supply mineral and other vitamin needs. The egg rates relatively high among animal products in supplying human needs for protein, iron, vitamin A, thiamine and riboflavin. It is about the only source of vitamin D except fish liver oils and sunshine. Most meats, fish and poultry have a higher protein and caloric value than eggs but, except for liver, are lower in vitamin A. Many vegetables and fruits are richer in vitamin A than eggs.

What happens to our total egg production? There is some wastage from uncollected eggs, unhatched eggs, spoilage and breakage. Some 2 billion are used for hatching. Over 8 billion are consumed at the source. Thirty-seven billion are sold as shell eggs (fresh). These may be infertile or fertile; they are of equal nutritive value. Some are in cold storage. Some are converted into liquid form as whole eggs, mixed emulsion egg white, egg yolk, sugared yolk, salted yolk and glycerine yolk. Some, and in markedly increasing numbers, become dried eggs.

Some diseases are carried from hen to chick through the fertile egg and cause many fatalities in young chicks. Diseased hens can be detected by blood test, and most hatcheries now use eggs from flocks which have been tested. The eggs which hatch produce about equal numbers of pullets and cock-

How will the POST WAR PERIOD *Find You?*

The turning of the year calls for "stock-taking" and justifies this question how the post-war period will find us.

To most Americans—in spite of high taxes and increased living costs—this war has brought a new kind of prosperity.

Whether the end of the war is "just around the corner" or years away—no one can foretell what it will bring.

Health and strength may make the difference in YOU—how YOU will meet the post-war period, whenever it comes, whatever it may bring.

Health and strength depend largely on nutrition—without good nutrition they are impossible—and good nutrition is impossible without proteins.

But proteins indiscriminately are not enough—even if your diet provides them in adequate quantity.

They must be the RIGHT KIND of proteins—complete, and of the high quality needed to make possible proper body maintenance and tissue repair—for proper, normal growth in children—for uneventful, speedy recovery from illness, blood loss, surgery—and, last not least, as an important factor in the bearing and rearing of healthy children.

Meat brings you the RIGHT KIND of proteins for every bodily need. Make it your "Yardstick of protein food values."

Many foods contain proteins. But proteins differ as widely as the foods that supply them. The difference lies in their make-up.

Proteins are made up of substances which scientists call "amino acids." So far 22 of them have been isolated. All contribute to nutrition, but only 10 are essential—the others the body can manufacture, as needed, if the 10 essential ones are supplied plentifully, each in an adequate amount.

The essential 10 the body cannot manufacture, they must be supplied by food.

If even one of these is missing for any length of time, well-being goes down, health becomes impossible.

Foods of animal origin (meat, fish, fowl, eggs, milk, and cheese) contain the 10 essential amino acids; foods of plant origin, generally speaking, are deficient in one or several of them.

Meat, containing *all* the essential amino acids, and each of them in an adequate amount, is of highest biologic value.

ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

AMERICAN MEAT INSTITUTE

MAIN OFFICE, CHICAGO . . . MEMBERS THROUGHOUT THE UNITED STATES

May we remind you?

1. **That** POSTUM has a distinctive flavor and should not be expected to taste like tea or coffee or any other beverage.

2. **You'll smack your lips** over that heart-warming, toothsome flavor... like as not you'll be a "two cup" Postum drinker once you've tried your first sip.

3. **You can practically make** it with your eyes shut... it's that easy! You make Postum simply by boiling, dripping, or "perking". *Instant* Postum just takes some boiling water in a cup.

4. **Don't forget** that Postum contains no caffein, no stimulants of any kind. A product of General Foods.

Tune in The Aldrich Family . . . Thursday Nights... NBC network.

Postum

ONE OF AMERICA'S GREAT MEALTIME DRINKS

erels. These may be sold to farmers and other poultry raisers at a cost of from 5 or 6 cents for cockerels to approximately 20 cents each for pullets.

Most cockerels are sold for broilers at a weight of around 2 pounds when they are 8 to 10 weeks old. The first gain of a half pound requires more than 1 pound of feed. The first pound of feed produces the greatest proportionate weight gain—each pound thereafter produces less and less gain until maturity. Cockerels usually require less feed per pound of weight than pullets. The fattening of mature cockerels, capons or hens not good as egg producers to make roasters requires anywhere from 3 to 12 pounds of feed for each pound of weight gain—depending on the type, size and age.

Pullets begin laying when they are about 6 months old but before full growth is attained, so that feed is utilized for maintenance, growth and egg production for the balance of the first year or longer and then only for maintenance and egg production.

The 400 million pullets and hens in the United States averaged 110 eggs, or a total of over 42 billion—about 314 eggs per person, for the year 1941. In 1942, the per capita share was about 320; and it is estimated to be about 347 for 1943.

Egg size is determined largely by the breed—as is the color of the shell. The nutritive value of the egg, especially the vitamin content, is affected by the diet and environment of the hen, with special reference to sunshine. The color of the yolk and the taste of the egg may also be affected by the diet. The labor and time which must be devoted to a flock of chickens is considerable. Special equipment and housing are required; much attention must be given to egg hatching during the three weeks of incubation; careful attention to the temperature, feed and sanitation of young and older chicks is requisite.

Chicken feed consumes products desirable for human food—corn, oats, milk, soybeans and wheat. A large amount of feed is required to produce poultry and eggs for human food. Eggs are a delectable and valuable food—but they belong to the costly luxury class. On the basis of present production, your share of the nation's supply is less than one egg a day.

The Important Nutrients of the Grain In Palatable, Appealing Forms

Ever since man learned to till the soil, foods derived from grains have supplied a goodly portion of his nutritional needs.

Cereal breakfast foods, whole-grain, enriched, or restored to whole-grain values of thiamine, niacin, and iron, supply the important nutrients of the original grain source in many different, tasty, appealing forms.

To eat a better breakfast—one that is nutritionally more adequate—is doubly important in wartime. Nutritionists and medical authorities recommend that breakfast be from ¼ to ⅓ of the day's total food requirement.

Only when the breakfast is adequate can we expect to go through the morning hours—the most productive hours of the day—at highest efficiency.

Cereals have an important place in the morning meal. Not only because they are available in such wide variety of taste and form, but also and mainly because of their noteworthy contribution to good nutrition.

When one ounce of cereal (prepared or to be cooked) is eaten with one-half cup of whole milk and one teaspoonful of sugar, this palatable dish provides about 205 calories of readily utilized energy and notable amounts of these important nutrients: proteins of excellent biologic value, the vitamins thiamine, riboflavin, and niacin, and the minerals calcium and iron.

The presence of this seal indicates that all nutritional statements in this advertisement have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

CEREAL INSTITUTE, INC.
135 SOUTH LA SALLE STREET • CHICAGO 3

A cooperative effort to present the nutritional value of cereal breakfast foods (whole-grain, enriched, or restored to whole-grain values of thiamine, niacin, and iron), undertaken jointly by THE CREAM OF WHEAT CORP. . . . GENERAL FOODS CORP. . . . GENERAL MILLS, INC. . . . KELLOGG COMPANY . . . NATIONAL BISCUIT COMPANY . . . PILLSBURY FLOUR MILLS COMPANY . . . THE QUAKER OATS COMPANY . . . CAMPBELL CEREAL CO. . . . ALBERS MILLING CO.

Medical Records

(Continued from page 25)

When the interns visited the record room that evening they were given a list of charts that had been set aside for them. A short discussion and demonstration reviewed the steps that were taken in collecting the charts. The whole process was quite simple. First the diagnostic file was consulted. This contained a list of chart numbers classified according to the final diagnosis of each case. Then these charts were taken from their files. After that it was just a matter of time until the study would be completed.

The record librarian had finished and turned to leave. One of the interns stopped her.

"That case we had in 206 was a tough one to diagnose. If it hadn't been for the record you sent up we might have missed it altogether."

Miss Thurston looked at him questioningly.

"You see he had malaria three years ago," the intern continued, "but didn't think to mention it."

"There are so many things to say, people often forget some detail," was Miss Thurston's comment, "or maybe they don't realize how important something like that might be."

"Or they're too sick to think. It surely was fortunate in this instance that we had an old report to fall back on."

Miss Thurston smiled gratefully. "Thank you, Doctor. It's good to know we have helped a little in the job of bringing a patient back to health."

"Sometimes the information you give us makes the difference between life or death to the patient."

"We do everything we can to see that the charts are kept up to date. That's part of our job, you know—to see that the old charts of previous admissions are included in the new charts when a patient is readmitted."

"And that means we have everything to work with, Miss Thurston. Each day I spend in this hospital makes me realize more and more what a vital role this department plays."

The other intern had been listening quietly until now. "I wonder if this wouldn't be a solution to a problem that came to my attention today," he said. "The girl in 310 has been hospitalized so long with that broken ankle that she's fallen behind in school. In fact, all her plans have to be changed a bit. Now you folks have set me wondering if a record librarian's career isn't just the thing for her."

"What had she planned to do?" Miss Thurston inquired.

"Oh, she didn't know exactly. She was taking some college work and thought maybe she would get a job in business. Hadn't decided yet which subject she would major in."

"Can she type or take dictation?"

"Oh, yes. She took that in high school."

Miss Thurston began to explain the work of the medical record librarian. She mentioned that there were schools for this type of training approved by the American Medical Association. She would get a new list of these schools, which could be had free of charge, and talk to the patient in 310. Usually, girls who go into record library work are good stenographers who want to be in a position with more future. At the same time these girls can work in hospitals, helping to take care of the sick.

When the list was received, Miss Thurston took it to the patient's room. She talked to her briefly about the work of the record librarian and then reviewed the information which the list gave concerning each school. She could see that the patient was interested, so she began explaining the subjects taught in these schools. They were all similar in their training programs, but some had courses designed for students who wished a college degree. Although this was not necessary, it did open opportunities, Miss Thurston explained. College graduates obtained a little better type of job and might later develop into instructors, because hospitals were beginning to start schools for medical record librarians—just as courses are offered for nurses or laboratory technicians in hospitals. The instructor's position necessarily carried more responsibility and therefore paid more salary. It was explained that the minimum entrance requirement for all schools was a knowledge of shorthand and typing and either two years of college or completion of nurses' training.

Students who are accepted have a twelve month training program in hospitals. During this time they are given intensive courses in medical terminology and detailed instruction and supervised practice in all branches of hospital work connected with the broader aspects of medical records. They spend some time in the operating division where they take dictation on operative procedures, take a course in anatomy and physiology, learn a great deal about medico-legal matters and are instructed in medical ethics.

Graduates of these schools are in great demand and will continue to be in demand. They are eligible for registration by the American Association of Medical Record Librarians which gives them the privilege of adding the designation "R.R.L." to their signatures.

Some of the registered record librarians are in the armed services, although a special group has not been formed. These persons have entered either through the Nursing Corps, with a hospital unit, or through the WAC or the WAVES. Those who are functioning as record librarians in the armed services have received praise from their commanding officers. This recognition has caused some members of the American Association of Medical Record Librarians to believe that some day arrangements will be completed for their members to join the Army or the Navy, thereby releasing more men for active duty.

The American Association of Medical Record Librarians was formed several years ago. A meeting is held each year during one of the national conventions of organizations interested in hospitals. There are also meetings for officers, delegates and various boards of the record librarians' organization. Reports of these groups are presented to the members and printed in their national magazine.

Miss Thurston summarized her remarks by saying that the work of the medical record librarian is pleasant, the acceptance of the responsibilities of these duties brings personal satisfaction, and physicians and hospital administrators recognize its value by taking an interest in it. Finally, she mentioned that the properly trained medical record librarians have created a profession for themselves which commands the respect of the medical world.

The Influence of Eugenics

(Continued from page 37)

into the various working systems—the nervous system, circulatory system, digestive system and reproductive apparatus, also the intellect, behavior, personality and character.

The genes comprise the hereditary traits and characteristics which have been passed along with variations from one generation to another ever since man appeared on earth, which is judged to be from 500,000 to 1,000,000 years ago. However, the role of the genes, or heredity, does not entirely control physical and mental make-up. The other influencing power is environment, the conditions to which the developing individual is subjected from the beginning of the sub-division of the fertilized egg to the end of his life.

The importance of healthy, normal ancestors must not only be emphasized in the home, but it must also be taught to our fourth year high school students. In all institutions of higher learning, eugenics should be a required course. These are puny beginnings for the solution of such an important problem as the betterment of the human stock, but if they believe in its importance, the parents of today must do their part to solve it and should stimulate interest and enthusiasm in it and aid in supplying working information to older children and friends.

LIVING TWINS BORN TO A WOMAN WITH A DOUBLE WOMB

Although more than 100 cases of women having two wombs and several instances of pregnancies involving one or both of such wombs have been reported in medical literature, Major Alexander Braze, Medical Corps, Army of the United States, reports in a recent issue of *The Journal of the American Medical Association* what is believed to be the first instance of a successful termination of simultaneous pregnancies of double wombs with living infants. In the case reported by him, one baby was a boy and the other a girl. The twins were normal and were living at the time the report was made.

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Among the good tooth cleansers which have been examined and classified as acceptable to the Council on Dental Therapeutics of the American Dental Association are Arm & Hammer Baking Soda and Cow Brand Baking Soda.

Church & Dwight Company makes no extravagant claims for its Baking Soda (Bicarbonate of Soda). We do say that it will help to safeguard teeth against trouble because it is such an effective cleanser; that it will aid in restoring the natural color of teeth when used regularly.

We think that, in short time, if you will try brushing your teeth with our Baking Soda, you'll come to prefer the clean, pleasant aftertaste that it leaves in the mouth.

Then consider too that a package of our Baking Soda, which will give many weeks of brushings, costs just a few cents.

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SURGERY HEALS THE SCARS OF WAR

(*Continued from page 27*)

geon can observe the condition of the tissues underneath it at any time. Another, the External Pin Fixation splint, is used to stabilize fractured parts when all the teeth are missing, and consists of a number of thin polished stainless steel pins, plus several connecting bars, universal joints and T bars. The pins are driven into the bone and the fractured surface of the jaw is locked in proper position for healing by means of the connecting bars.

The close relationship between oral and plastic surgery and the development of these new splints have made possible remarkable feats of restoration. Parts of one officer's jaw and neck were shot away when his landing barge received a broadside at Casablanca. His jaw was almost completely rebuilt with a bone graft from his hip. Flaps of skin from uninjured parts of his face filled out his neck. His face now shows hardly a sign of his ghastly wound.

One of the most difficult cases army plastic and dental surgeons have ever undertaken was that of a private gravely wounded in North Africa by shrapnel which penetrated his cheek and destroyed almost half the roof of his mouth.

To rebuild the soldier's palate, the surgeons used what is known as the "tubed pedicle skin graft," a technic applied during the last war but now considerably improved. A strip of skin and fat was raised on the soldier's arm and its sides were stitched together to form a solid cylinder of tissue which looked like the handle of a satchel with both ends still attached to the arm. This handle, or "pedicle," was lined with extra skin grafted from other parts of his body. In a few weeks, surgeons had a supply of healthy, heavy skin with which to fill the hole in the roof of the mouth. The soldier's arm was rigidly held in place close to his mouth and one end of the cylinder of flesh severed from the arm and sewed to the damaged palate. The severed end received nourishment from the end still attached to the arm, until it was securely healed in the roof of his mouth. The other end was then severed from his arm. In time the soldier left the hospital with a new palate.

Almost as remarkable is the case of another infantryman who was seriously wounded in Africa. A piece of shrapnel went clean through his face, destroying one eye and the inner wall of his nose, breaking several bones and tearing a hole in each cheek. The patient's nose was refractured and rebuilt. Rib cartilage helped restore the contours of his cheeks and nose. The eyelid was reconstructed and the eye socket lined with fresh skin so that an artificial eye could be inserted. Looking at this soldier's face today, one would never suspect the extent of the ghastly wound which had once disfigured it.

Cartilage, such as was used to build up that boy's face, plays a major role in military plastic surgery. Unlike skin tissue, it can be transplanted from one person to another and can be preserved in a germicide solution for future use. Because cartilage is firm, yet pliable enough to be shaped as the plastic surgeon desires, it is ideal for rebuilding ears or nose and the bony margins around eyes, or to protect the brain where the skull has been pierced. Our Army is making extensive use of both fresh and preserved cartilage.

The burns of this war require plastic surgery more often than did the burns of World War I. Army surgeons have performed wonders in removing the frightful ravages of fire on human flesh. Sulfa drugs and blood plasma make it possible to save life and prepare burned patients for plastic surgery in from three to six weeks, when skin grafting can be begun. Formerly it took much longer. Surgeons must first remove the scarred or burned skin until normal, living tissue is exposed. This is covered with new skin taken from other parts of the body.

One soldier's neck was severely burned in the explosion of a gasoline dump in the Aleutians. Because of scar contractions, his head was drawn down toward his chest, and he could neither turn nor raise it. Army surgeons removed all the scar tissue, and grafted skin from the boy's abdomen to his neck. Today his neck looks and functions as well as yours.

This reconstruction was helped by the Padgett dermatome, named

BLOOD BANK

What is a blood bank? All I know is this—
It holds, perchance, a wounded soldier's life;
The prospect of a waiting sweetheart's kiss;
The happiness of some good soldier's wife;
A mother's answered prayer; a father's smile;
The future of a merry little lad
That hangs precariously in time and space,
Or some sweet girl—the dream-girl of her Dad—
Who never yet has seen her father's face.

But, overall, it holds the destiny
Of this America where all worlds meet—
Your land and mine, where every man is free;
A nation that has never known defeat.

It holds the ammunition for the fight,
Again—again. But have you given your mite?

—Christine Park Hankinson.

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IODINE
Foe of Infection

after its inventor, Dr. Earl Padgett of Kansas City, and regarded as an outstanding recent contribution to plastic surgery. The dermatome is an instrument that can slice living skin off the heaving abdomen, chest or thigh of a patient under anesthesia in uniform sheets of a predetermined thickness, accurate to thousandths of an inch. It is now almost always used when a free skin graft is needed for covering burned portions of the body.

Another soldier suffered third-degree burns on his hands in an accident in North Africa. In civilian life he has been a successful concert pianist and music teacher, so his injury threatened him with unemployment after the war. Thanks to the Army's plastic surgeons, he need not seek another profession. A skin graft restored his hands, and he is now practicing hard on a typewriter to regain his old dexterity. Mrs. Roosevelt, visiting the hospital, became interested in the case and invited him to practice on the White House piano. He is often to be found there.

A soldier was shot in the foot by Japs on New Guinea. The inner half of his heel was destroyed. Ordinarily this might require amputation of the foot, perhaps even of the lower part of the leg. A tubed pedicle, or raised handle of skin, was made on his abdomen and in due course one end of it was severed and grafted to his thigh. (Only a circus contortionist could have bent his leg back so as to have the "pedicle" reach directly from abdomen to heel.) In a couple of weeks the other end was cut away from his abdomen, his leg was held back, and the pedicle was grafted to his heel. After healing, the tubed pedicle was severed from the thigh—and there was a new heel on the soldier's foot.

Though army surgeons are performing many amazing restorations, there are bound to be some difficult cases—a small fraction of the total needing plastic treatment—which they can do little to help. Moreover, even successful restorations do not necessarily make a man look exactly as he did before he was injured. He may not have the same facial expression, his best friends may not even recognize him. But the chances are overwhelmingly in favor of his coming out of hospital with no repulsive disfigurement.

Plastic surgery can repair a man only to the extent that the proper raw material—whether skin, bone or cartilage—is available. It cannot, as has been mistakenly supposed, reconstruct glands to restore the function of the reproductive organs.

Despite recent advances in plastic surgery and the victories over infection being won by sulfa drugs, many battle injuries still require the amputation of legs or arms. Here orthopedic surgery is on the job, fitting artificial limbs to stumps. At five "amputation centers" in various parts of the country, including one at Walter Reed General Hospital, the Army has experts who fit the disabled soldiers so skillfully that they may be returned to their former occupations or are physically fit for training along other lines.

But the problem of fitting a workable appliance to an amputated arm stump has been extremely difficult. There is a word you will soon hear in this connection. It is "Cinetization"—a plastic surgery technic which is likely to emerge as one of the greatest boons ever devised for veterans and others with amputated arms. "Cinetization" harnesses the muscular power left in an arm stump to a mechanical hand, so that the mechanical hand has much of the efficiency and flexibility of a living hand. It does this by making use of the muscles still left in the stump, which need be only a few inches long. Pegs are passed through skin-lined canals in the stump's muscles and attached to levers which operate the mechanism of the artificial hand and forearm. Those who have had this operation find that they can typewrite, play cards, sculpt—in short, do much that they used to do with a living hand.

Although the idea of an artificial arm and hand controlled by natural muscular action dates back to the turn of the century, it was not until after the last war that a German developed a technic for doing it. The method has long passed out of the experimental stage. The bottleneck is the lack of knowledge among plastic surgeons and brace makers of the possibilities of the technic. "Cineplastic" operations have already been successfully performed on several hundreds of people, including many of those wounded in this war.

Even when it is not possible to restore the full function of some part of the body, army plastic surgeons try to restore its normal appearance. One soldier was sent to the reconstructive surgery division of an army general hospital after having both eyes blown out by an exploding land mine. A call went to the Maxillo-Facial Research Department of a general hospital—part of the reconstructive surgery division—for what is known to surgeons as a prosthetic appliance, something to substitute for nature in appearance if not in function. In this case the appliance was an amazingly lifelike pair of adjustable eye sockets, complete with eyelashes and eyelids, into which artificial eyes were fitted. So natural were they that when the soldier asked a railroad information clerk what time a train was leaving, he was handed a timetable and told to look it up himself.

This soldier himself has somehow got the feeling that he can see. Returning recently to the hospital, he declared solemnly, "I've just been down home looking over a piece of land." This was not a pose but a true reflection of his mind. He is now successfully running his own farm on the very land he went down to "look over."

One of the newest substances used in prosthetic appliances is the rare metal, tantalum—an answer to the long quest for a perfect surgical metal—a metal which, when buried in human tissues, would suffer no chemical change. Tantalum is bluish-white, strong, tough and malleable. It can be drawn, while cold, into wire as fine as human hair; it can be flattened into foil so thin that nerves and tendons may be wrapped in it without damage to them. This noncorrodable, nonpoisonous, nonabsorbable metal is extraordinarily useful for repairing defects of the skull caused by war injuries, for covering skull defects caused by such wounds, and as a hair-thin wire for sewing together divided nerves.

Present-day military plastic surgery did not, like Topsy, just grow. It is the result of tireless research, careful planning, and an effort to profit by the mistakes of World War I. Long before Pearl Harbor, the National Research Council, at

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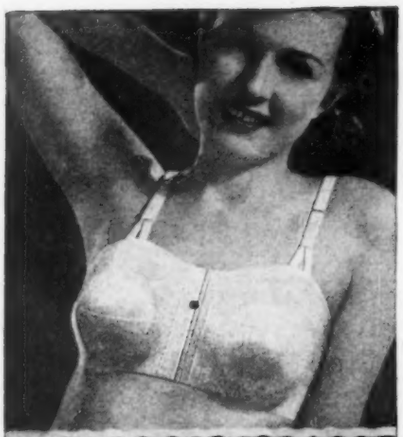

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the request of the Surgeon Generals of both Army and Navy, compiled for the use of military and naval plastic surgeons the soundest and latest professional literature in the field. This helped to standardize surgical practice at the highest level—something which was not true in World War I.

The plastic surgery being done on service men during this war will surely stimulate interest, research and new ideas after the war. Out of the first world war came several methods which revolutionized surgical procedure, including the "tubing" of a flap of skin. The present war has already demonstrated the worth of the Padgett dermatome, of lifesaving plasma, sulfa drugs and penicillin, and various new splints for jaw injuries—with more progress in the offing.

The Army's plastic surgeons toil unremittingly to carry out their share of the government's program for the wounded. That program has as its objective the returning of every wounded mother's son to civil life, wherever possible, in a condition which will permit him to take his place in society to compete without handicap in the strenuous economic struggle ahead.

The Hospital Patient in Wartime

(*Continued from page 12*)

fewer alcohol rubs and similar luxuries; nurses just do not have the time. It is difficult for them to keep their schedules, and it is well for the patient not to be surprised or disturbed if, for example, his bed is not made before the breakfast tray arrives. If the patient is able to walk in the corridor and observe that every room is occupied—some by sick and some by desperately ill patients—and see how nurses hurry from one responsibility to another, he will understand why some of the little things have to be eliminated, and why there are delays in the routine. To regard this as personal neglect is foolish. It is likewise selfish, even thoughtless, to put needless demands on the nurses. Instead, the patient should contribute all the self help his physical condition permits, and it will surprise some to find how much they can do—thus giving the time saved to those who need more attention. The patient should not have any notion that the hospital in wartime is a sort of hotel, and that he is paying for a lot of personal services which he has the right to demand. In so far as the selfish, aggressive person obtains unnecessary attention the nursing load is increased, and frequently some one is robbed of attention.

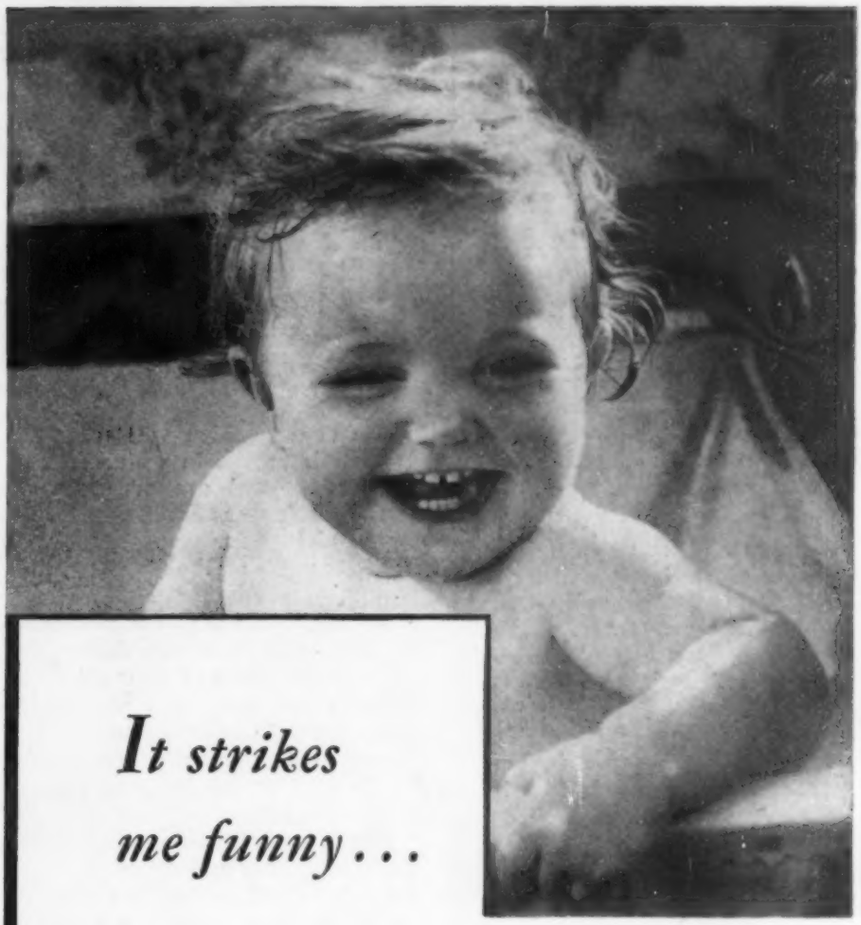
One of the ways the patient can help is to be observant. If he has medicine to take before eating and his lunch appears first, he must bring this to the attention of some one in authority. Probably, this means that some nurse is behind in her schedule and will appreciate being told of the omission so that some one else who is free can take care of it. If the nurse expects to bring medicine for the night and turn out the lights at about 8 p. m. but does not arrive until 9 p. m. she hardly needs to apologize, for you know that some emergency has thrown her off schedule.

One noon I was surprised to find that I had been given the surgical diet for lunch. Since I had been eating regular food I thought the change unusual but assumed that it was going to be preliminary to some test. Actually, I should have found out immediately why my diet had been changed. It was a mistake. Possibly some other patient had a lunch that day that was not good for him. In my case it led to an unusually large appetite at supper time. I ate more than was my habit, and as a result I did not sleep well. I decided to write a note to the dietitian and tell her that I was accustomed to simple suppers and had been feeling guilty when I was leaving so much of my evening meals uneaten. It seemed a shame to waste excellent food, and I knew from experience that a simpler supper was better for me.

I was glad I sent the note down, because the dietitian came to see me and I had an opportunity to learn a little of her problem. We all find the purchasing of food difficult these days. Surely no one has a greater task than the dietitian of a hospital. She must be prepared to furnish various kinds of diets, and

yet in her marketing she must always keep the cost in mind. The dietitian had just had a new problem thrown on her because she had been unable to buy oranges that day and was forced to eliminate orange juice at least temporarily from the diet of all who did not have special need of it. This is just an example of the sort of thing that she faces day after day. Under the circumstances I marveled that she was able to give us the meals she did. Still, it would be false to give the impression that I saw no change in the hospital's meals eleven months after my first hospitalization. There was a marked difference, and, as one would rightly expect, it appeared most of all in the smaller amount of meat served. I felt that the dietitian had met the changed situation in our food production much more skilfully than most efficient housekeepers, in spite of the fact that she had a vastly more complex dietary problem. However, it will only bring discontent if one entering a hospital fails to remember that our present food scarcities are making even more trouble for the hospital than for the average home.

The most vivid impression I gathered by comparing my first visit with my second is the terrific load that the hospital personnel is now carrying. The nurses were working too hard, and this was even more true of the doctors. Before I left I had a glimpse of the clinic load carried by my own surgeon. For a short time I saw him as he handled the men and women waiting in turn for his attention. I feel sure he understands perfectly that he is at present overworking. What can he do about it? It is his share of the penalty of war, but we who are lay people can help in this crisis. We can do our level best to live according to sensible hygienic laws that may save us from illnesses due to our own bad habits or excesses. This at present is a social obligation placed on every American adult. If, however, we must go to a hospital we can help even then by accepting inescapable war conditions with patience and understanding, and also by taking with us to the hospital a "therapeutic intent" which will make us cooperate with the physician and nurse and thus shorten the time for which we require their services.



It strikes me funny . . .

Mother calls it *baby's* 'Borofax'—but *she* uses it to prevent chapped and roughened skin, *daddy* uses it for small burns and bruises and *sister* uses it to help keep her skin soft and smooth. It's baby's 'Borofax' all right—but the whole family uses it.

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QUESTIONS AND ANSWERS

Allergies

To the Editor:—After serving in the Army for a number of years, I am going to be separated from the service because of severe attacks of asthma which have caused me to be hospitalized on two occasions. On returning to civil life, my decision as to where to live will be important. On it may depend my future health and my ability to earn a living for my family.

Tests have shown that I am sensitive to Russian thistle, burning bush, redroot, pigweed and Timothy, June, Redtop, Johnson and Bermuda grasses. In addition, intradermal tests show a marked reaction to ambrosia, Artemisia, cottonwood and ash-maple.

I should like to have any charts that may be available showing the areas in which these pollens are prevalent, or reference material on allergy and pollen incidence which might be enlightening in my case. E. B., Kansas.

Answer.—In view of your list of sensitivities it is going to be extremely difficult for you to find a place to live. Russian thistle practically puts the Pacific Coast out of consideration, thus depriving you of one of the best refuges for allergic persons. Your other allergies include such widely distributed pollens that your problem becomes largely one of finding a place fairly well surrounded by water, so that wind from any direction would blow principally across large bodies of water.

From the United States Department of Agriculture you may obtain maps of the United States showing the distribution of all the pollens to which you are sensitive. By superimposing these maps one after another on a blank map, you may arrive at one which will show the overlapping areas in which several of your pollens are present. Of course, such areas are definitely out of the picture for you. There will be other areas on the map in which only one pollen is present. Such areas might do for you if you could arrange to go elsewhere during the pollinating season of your allergen. Perhaps the map will also show blank areas in which none of your enemy pollens prevail; these would be the best choice for your permanent residence.

You should bear in mind, however, that after a person has suffered from asthma or other allergies for a long time, relief is not always complete even when the offending allergens are removed. If it is feasible, the best procedure would be for you to visit the areas which appear to offer the most favorable conditions and learn from actual experience how comfortably you can live there.

Kidney Stones

To the Editor:—At the age of 15 my left kidney was removed due to stones. Last year my younger sister had operations on both kidneys within a period of three months. After she regained her health my older sister became very sick with a stone in her kidney, which later passed without operation. All three of us are under a doctor's care, and from time to time pus shows in our urine.

Please inform me if such stones are hereditary and what is the nature of this condition.

E. R., Illinois.

Answer.—In spite of the voluminous work done on the cause of kidney stones, there is no unanimity of opinion as yet concerning the exact nature of their formation. Infection, local abnormalities of the urinary tract, diet and heredity all have been considered from time to time as factors. The general opinion is that heredity plays a very small part in the formation of urinary stones. The fact that stones occur more frequently in one family than in another may be attributed to dietary habits of members of the same family. Some investigators believe that stones are brought about by disease processes outside the kidney and urinary tract, but more investigators believe that dietary habits, especially deficiencies of vitamins A and D, are chiefly responsible.

Fortunately, treatment of urinary stones is quite satisfactory. The physician must be the one to decide for each individual patient whether dietary or vitamin deficiency is the predominant cause, or if infection or some anatomic anomaly is present. Treatment should be planned according to his findings in each case. By so doing, results are exceptionally good, despite the fact that the details of stone formation and its causes are not precisely known.

Cesarean Section

To the Editor:—Would you please give me some advice in regard to conflicting opinions of doctors about Cesarean section? In one place they say that if you have a Cesarean operation, then all future babies must be by Cesareans. In another community the doctors said they saw no reason why normal birth was not possible even after a Cesarean.

G. G., Kansas.

Answer.—The operation of Cesarean section is done today for such a wide variety of indications that any general remarks are certain to be contested. Years ago when a Cesarean was done only for so-called "absolute indications," i. e., when there was no alternative method of delivery, the dictum of "Once a Cesarean, always a Cesarean" developed. The type of operation and its performance by a surgeon not especially skilled in obstetric surgery further emphasized this principle. Today each case must be weighed and an opinion reached on purely individual factors, and no one, not even the attending physician, can give an

unqualified answer. True, many patients may not need repeated Cesareans, but the physician would be foolhardy who would guarantee his patient long in advance of her confinement that conditions might not arise later or even during labor that would necessitate the operation.

Gravel Dust

To the Editor:—The playgrounds in our city are of fine gravel. During the summer they are not sprinkled, and the dust comes up in fine clouds as the children run back and forth. Have you any information on the effect of this dust on the bronchial tubes and lungs of children?

E. T., California.

Answer.—The dust kicked up from gravelly streets and yards is unpleasant and may be somewhat irritating to the nose and eyes, but it has never been proved that it is capable of causing permanent injury to the lungs. Such dust does not cause silicosis because it does not contain quartz in sufficient quantities and in a sufficiently fine state of subdivision, nor is it possible to inhale enough of it to produce this effect. It might be considered as a nuisance rather than a real danger to health.

Radium Treatment

To the Editor:—Why is it that x-rays are used in conjunction with radium in the treatment of malignant growths, since they are both practically the same except in their manner of generation? Why are not some of the other radioactive substances used instead of radium?

A. P., Canada.

Answer.—X-rays and radium are usually used alone and rarely in combination. The action of the two is not the same, and under certain circumstances the physician must choose either one or the other agent. Other radioactive substances are sometimes used instead of radium, but on the whole radium is the most satisfactory.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

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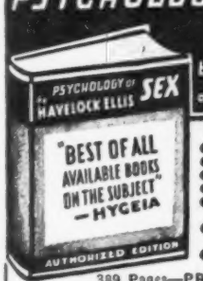

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Your Medicine Cabinet

(**Continued from page 23**)

does. Those prescriptions which you got for Aunt Mary's rheumatics won't cure Uncle Henry's stiff knees. It may be fine to hand down the family silver, but not the family prescriptions.

Oh, yes, and when it comes to the "good neighbor policy," limit it to the pantry. Don't share rheumatism prescriptions as well as layer cake!

MR. ALLEN: You have told what should be in a medicine cabinet. How about the things which should *not* be included?

MR. FUQUA: Let's begin with the deadly carbolic acid, and the still more dangerous bichloride tablets. They should never—under any circumstances—be in any home medicine cabinet. Remember, children cannot read the word "poison," and the skull and crossbone sign means nothing to them—except "Pirates."

MR. FUQUA: And for heaven's sake, turn on the light before reaching for your medicine at night. No one will ever know how many deaths have resulted from taking a dose from the wrong bottle in moments of panic, confusion or just plain sleepiness.

MISS KING: It may sound silly to mention this, but don't let the ant powder or roach poison stray into your medicine cabinet. These things don't belong in the pantry, either. Many poisoning deaths have come by getting these white powders into the baking powder biscuits. Find a special place for insecticides, too high for children to reach.

MR. ALLEN: All of us lay people are hearing a lot about the sulfa drugs. Some stories we are told make us believe that everything can be cured by sulfas. Have you a suggestion regarding this?

MR. FUQUA: No sulfa drug should be taken except on the prescription and under the immediate supervision of a qualified physician. These lifesaving drugs are also potent poisons when taken by the wrong patient for the right disease.

MR. ALLEN: How about penicillin? We are confused about that, too.

MR. FUQUA: This drug is not the cure-all that recent headlines would lead the public to believe. It is still in an experimental stage. Incidentally, it is not a drug product which you will be interested in putting in your medicine cabinet for a long time. At present, with the current method of production, it is estimated that at least two hundred dollars' worth will be required to treat a typical case of pneumonia. Furthermore, it's unobtainable. Our whole supply goes to the armed forces today.

MR. ALLEN: I'll put off my pneumonia indefinitely! But according to current ads, we can all be full of vibrant health and beautiful as the dawn, if only we gobble enough vitamins. What can you tell me about that?

MISS KING: I don't pretend to be an expert, but I am expert enough to know that your doctor, not your newspaper, should be your guide, philosopher and friend.

MR. ALLEN: I know how grateful all our listeners will be for these simple and practical suggestions. Now that so much medical information is available to the lay public, it is difficult to know what to believe or what to do in any given case. Is there some simple rule to help us out?

MISS KING: I have one, and I'm sure Mr. Fuqua will agree with me heartily. If there exists the slightest doubt in your mind about the wisdom of any given drug for any given disease, consult your own doctor. The friendliest advice from your neighbor, the most persuasive "blurb" you ever read, are potentially very dangerous when misunderstood or misapplied. First, last and all the time—your doctor is the key man. It would be wise, the next time he calls, to get his advice on every item in your medicine cabinet. Don't you agree with this as a pharmacist, Mr. Fuqua?

MR. FUQUA: Indeed I do!

Do You Want to Be a Nurse?

Minnequa School of Corwin Hospital offers a career course in nursing for war and peace to high school graduates who rank in the upper half of their class. School is accredited by the Colorado State Board of Nurse Examiners, and is participating in the program of the United States Student Nurse Cadet Corps. Classes admitted March and September.

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ELECTRONICS IN MEDICINE

(Continued from page 17)

the suffering patient who seeks his advice.

For the diagnosis of actions inside the blood stream the physician will call on the electronic alchemist, the cyclotron. Taking a simple salt, the cyclotron temporarily gives it the properties of radiation which radium has. The salts then act like radium but are not poisonous. To the patient seeking to regain his health the activated salts are likely to prove more valuable than radium, for they permit the doctor to feed or inject labeled particles into the body and to observe their behavior through radio photography or by a fluorescent screen. Already the new technic has enabled medical science to inject materials into the kidneys, the pelvis, the bladder, the spinal column and the delicate ventricles of the brain—even to determine blood clots in the veins and to direct the surgeon precisely to those which must be removed.

The determination of the exact color of certain ingredients of the body is important to clinical analysis. Every donor of blood to the Red Cross has noted how a sample of blood taken from the finger is compared to colors on the nurse's chart to discover whether or not the donor is suffering from anemia. A new photoelectric device capable of identifying two million different shades of colors, as against the ability of the human eye to detect ten thousand tints, has taken the guesswork out of determining blood color. Medical science uses the new color machine, too, for analysis of pigments of the skin and even sex hormones.

Treatment may be helped by the direct use of the electron in its many applications. Perhaps it is necessary that heat reach deep into the interior of the body or that the temperature of the entire body is raised. An electronic machine induces artificial fever and does it by heating the tissues inside, instead of heating the outside of the body the way the sun or a stove does. The discovery of the electron's power to create artificial fever was accidental. Two engineers, working on a new, high frequency radio transmitter in the research laboratories of General Electric, complained of headaches and fever. Medical examination revealed that, immediately after working on the powerful transmitter, both had temperatures of 102 degrees, their pulse rates had jumped 50 to 75 per cent and their blood pressure had dropped 40 per cent. But the most amazing fact was that all these symptoms disappeared within thirty minutes, leaving not a trace of the fever symptoms.

Dr. Willis Whitney, head of the research laboratories, had heard of how, in foreign countries, malarial fever was being used to treat general paresis, a dangerous brain disease. He speculated that what had happened to the engineers as a result of being subjected to high frequency radio waves might offer a better and controlled substitute for malarial fever. Starting with experiments on rabbits, research moved carefully until human beings were being treated. Hundreds of paretics have been saved since that day in 1927. Today, the heat produced inside human tissues is used widely to relieve pain in sinus conditions and in treating joints, back, chest and sore muscles.

The horizon of irradiating or heating the body with radio waves has almost no limits. With the practical utilization of ultra high frequency, very short waves, heat can be beamed in a controlled, direct line to a specific small area in the body. The lungs, the kidneys and the stomach lie in this field of complex organs to which ultra high frequency waves will bring health-giving heat.

X-ray treatment for cancer has advanced far beyond its early uses. In Los Angeles a new x-ray carries two million volts and bombards malignant cells with radiation equal to more than a hundred million dollars' worth of radium. Scientists expect a great deal from these high voltage electron tubes, since they promise to destroy the cancerous tumor without damaging the overlying tissues and without recourse to surgery. X-ray, in everyday use, also successfully treats skin disturbances, dreaded gas gangrene and acute inflammations.

Medical research in the past has found itself stymied when it could not see or measure the object under investigation. The electron is just about the tiniest particle that exists. Along with being minute in size, it is one of the lightest substances known. This combination is of tremendous importance. The limit of the smallness of any object that can be observed by the ordinary microscope is reached when the object which is to be measured is smaller than the disturbance or diffraction caused by the length of light waves. Electron wave lengths are very small compared to light waves, therefore the diffraction is much less, and far tinier objects can be seen. Add to this the discovery that the electron, when traveling through electric and magnetic fields, behaves exactly as does a beam of light traveling through space, and the perfect theoretical combination for microscopic observation and measurement is at hand.

Ten years ago the theory became fact. The first electron microscope was developed. It is today, though

---

THE INTERNIST'S SONG

I had a bad cold in my head,
  A snarling, snuffling snorter.
Alas! I could not go to bed
  Though well I knew I oughter,

And as I sneezed along my rounds
  (More numerous than usual)
The germs' delight was past all bounds
  And they held high carousal.

The cocci, micro, staph and strep
  Were present in profusion;
B. influenzae, full of pep,
  Increased my sore confusion.

Each of my patients, young and old,
  Grinned like a Disney elf.
They cried, "Why, Doc! You've caught a cold,
  Why don't you cure yourself?"

"Why don't you cure yourself, now, Doc?"
  I heard on every hand.
Could I have answered with a sock
  That would have been just grand.

"Why don't you cure yourself?" they crack.
  Was ever question dumber?
I'd had more peace, and made more jack
  If I had been a plumber.

—W. P. K.

Do you know—

how many General Electric lamps it takes to equip an M-4 tank? About 27 . . . the same number of lamps you might find in the average small home. To serve the needs of the armed forces, General Electric makes several hundred different types and sizes of lamps especially designed for military use. Each of these, like the dependable G-E lamps that light your home, are *made to stay brighter longer.*

Do you know—

what you want in tomorrow's lighting for your home? Perhaps it's fluorescent "daylight" for your kitchen? Or a fluorescent bed-lamp? Or health-giving ultra-violet for the bathroom? Think about it now so you'll plan for it after the war. Tomorrow G-E lighting research will bring you many new developments for better, brighter living. But you can always be sure of this: the mark G-E on a lamp bulb is your assurance of lamps made to Stay Brighter Longer.

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still in its infancy, making possible the most exciting exploration of a never before seen world. With it science is already able to see objects fifty times smaller than was ever possible before with the best light microscope, and it is possible accurately to magnify these tiny objects one million times by fluorescent screens or photography. The sensational future of the electron microscope may well include observation of the actual transition between living and nonliving matter, the ultimate secret which has defied the efforts of scientists and thinkers of all time. Already it has done a terrific job. Pneumonia, the cause of the deaths of so many young people, is caused by a virus which has now been seen and studied under the electron microscope. Seeing the virus and watching it act is the beginning of learning how to combat it. The streptococcus germ has also been observed, as has the germ which causes typhoid fever and fatal anthrax. Not just vaguely seen either, for the new microscope reveals every detail of structure. More—it reveals, too, the action of minute organisms which fight these germs.

As a machine, the electron microscope contradicts all our ideas of how a seeing device should look. Optical lenses are replaced by electrostatic or magnetic lenses, electronic light sources take the place of natural lights, and all the elements, including the object to be viewed, are enclosed in a vacuum, since the electron beam can be formed and focused properly only in the highest possible vacuum. With this equipment, the electronic ray is transmitted through the object being studied and is seen in tremendously magnified form by the observer.

There is not a field of medical research that will not be advanced by the electron microscope, but it is far from the only new aid to research made possible by the new mastery of electrons by engineers. Brain nerves, nerve currents, heart beats, pulse rates, respiration and fatigue—scientific knowledge of all these has been extended by specific electronic instruments.

The brain and its relationship to the nervous system are giving up their secrets to a complicated electronic instrument which measures the electrical impulses sent by the brain. Somewhere inside the brain there is a broadcasting station which sends an exact number of wave pulsations down each nerve to stimulate a particular muscle into action. Even the rate of travel of this pulsation from the brain to the finger is known now. Engineers have deducted that the brain must have in it accurate control devices, comparable to the mechanism which turns the light on and off in a flashing electric sign. These "standard oscillators," as the engineers call them, must control the steady, unchanging beat of the heart and the action of the lungs. When that oscillator goes out of order, we know it—pronto. The study of these physiologic activities inside the body are as much in the engineering field as they are in the medical, and their kinship to man's directed electronic activity is so great that many a scientist has switched off his electronic instrument to meditate on the greater perfection of the operation of the human body. Not only to meditate but to speculate on the tremendous revolution in treatment and cure of the body's ills which will come when we finally understand the human body's complicated system of wave lengths and electrical energy output.

The electronic engineer has, in devising all these medical instruments, become the partner of the physician. Engineers, however, are not physicians, and only the medical profession can administer the magic of the "medicine man" in the tube. That takes a knowledge of anatomy, the nervous system, the chemistry of the body and hundreds of other things which only the physician can relate to the electronic field. Vibrators, wave cures, electrical cure-alls, whether sold for home use or administered by a quack, won't help the patient at all. That was the type of thing which gave electricity a shady start in medicine. Both physicians and engineers are determined that the great postwar growth expected in the field of medical electronics shall not be hampered by ignorance or swindling. Electronic medicine is powerful and wonderful enough to perform miracles legitimately. Those miracles are only beginning. From the cradle to the grave, electrons will, in close alliance with all the other practices of medicine, give us new protection against disease.

WAR-TIME necessity is making a remarkable change in this country's understanding of hearing troubles. Time was, and not so very long ago when, if a man suspected his hearing was slipping, he dodged the issue in a hurry, blamed other people's "mumbling" for his difficulty in hearing, and as for wearing a hearing aid . . . well, that was utter nonsense. With the result in all too many cases that his hearing grew steadily worse and upset his life, his self-confidence, his income and often his family relations before he'd consent to try a hearing aid.

But take the case of Sgt. John M. H. . .* (*left*) . . . and what a difference! While a private on overseas duty, H. . .'s hearing began to fail to a point where he had to be returned to the States. His training and his personal aptitude justified keeping him in service. He was too good a man to lose. So he was transferred to an Army flying center in the Southwest.

He was worried, of course. Like any patriotic youngster, he wanted to do his best for his country. So when one of his officers discussed hearing aids with him, he jumped at the idea. No false pride! No vanity! He *wanted to hear* . . . got a Sonotone . . . and now hears so well that he has been twice promoted, and is an instructor at the flying field.

If he had been born 20 years earlier, his hearing loss might have handicapped his whole life, but thanks to the common-sense of this younger generation, Sgt. H. . . will return to private life after the war with the knowledge that his hearing need never be a handicap in his life. He has won that fight . . . won it *early* when it counts most!

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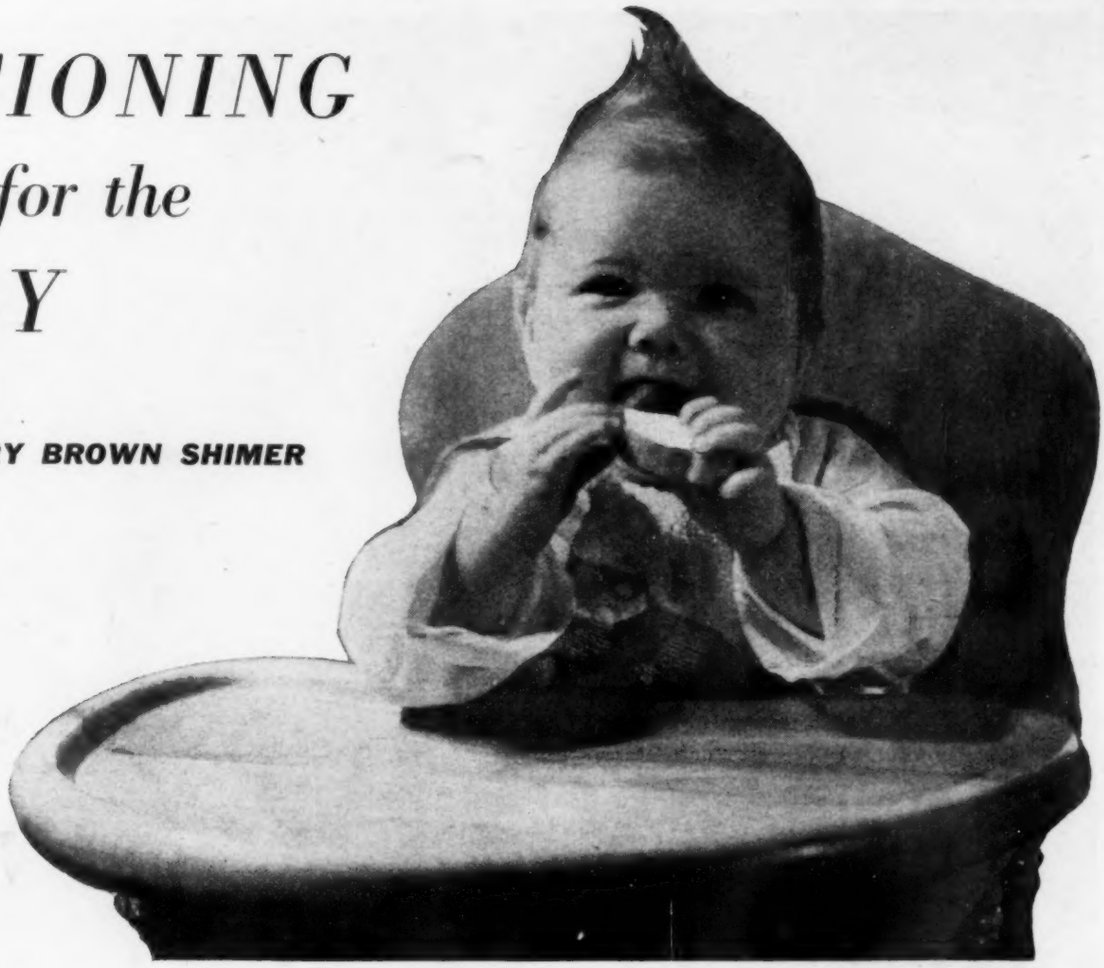
RATIONING for the BABY

By MARY BROWN SHIMER



Many of the foods needed by babies are rationed now; so are some of the articles of clothing and some of the equipment needed to care for babies. But with careful buying and cautious use there need be no shortage

ALONG with 130,000,000 other problems in feeding, the OPA now has an added 2,800,000 howlers against rationing—Uncle Sam's babies for 1942. Add approximately 1,500,000 for this year, 1943, and you have an idea of the rationing problem in rubber goods, bottles and the cotton triangle now facing OPA and your local rationing board.

In this time of rationing, approximately 3,000,000 new citizens must be fed, clothed and cared for with a view to the future. Baby's milk, pureed foods and sugar come under the points allowed each person in the United States rationing plan. How best to satisfy his needs under rationing now has become the problem of modern mothers and pediatricians.

Rationing means neither malnutrition nor going without needed foods for the adult population or the baby. As food is so important a weapon of war, rationing is merely a simplified method of spreading supplies to allies and citizens without allowing hoarders and chiselers any leeway.

The foremost problem of baby food rationing, of course, is the question of milk. Evaporated and dried milk are essential foods which may be easily shipped to our soldiers and our allies, yet at the same time evaporated milk is included in most infant's formulas. One 14 ounce can of milk is equal to approximately one quart of whole milk. OPA says: "A consumer may buy any number of small sized cans of milk, whose total weight is 1 pound or less, for a single point." In case you have a baby with an unusually healthy appetite, the board has provided that persons whose doctors certify that their babies "need extra amounts of canned milk . . . may apply to their local ration boards for supplemental rations." This is likewise true in the case of canned foods.

Very young babies, of course will probably have all forty-eight of their allowed points used directly for canned milk, while older babies (from 10 to 18 months, or whenever the doctor thinks the child is ready for such meat as scraped beef) should use part of these for meat products. It is a wise precaution to use seven of the sixteen weekly points for milk and the remainder of the allotment for meats, such as bacon or ground round steak.

If your baby has not become too accustomed to the taste of evaporated milk, you might, with the doctor's approval, of course, substitute dried milk, which is often used for babies in the tropics.

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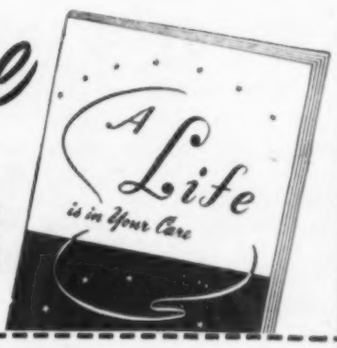

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In order to conserve the available milk supply, as one mother in 30,000,000, do not waste it! See that milk is kept in a cool place. At meal times, remove the quantity to be used and immediately replace the rest in the refrigerator. Keep it away from odoriferous foods and do not refill the bottle with milk left undrunk. Scald frequently and use plenty of hot, sudsy water on all milk containers. It is also a good idea to sun bottles often in order to remove all odors. Too, remember that even dried milk keeps better in the refrigerator and that opened cans of condensed milk should be kept cold.

If your baby's meals are a bugaboo, here are some suggestions: Meat is always a prime factor and in order to conserve and prepare appetizing dishes, first of all, learn to care for it. Keep all meat in the coldest part of the refrigerator and wipe with a damp cloth before using. If you buy large quantities or you can get frozen meat suitable for your baby, keep it in the freezing compartment until it is ready for cooking. Do not allow frozen meat to stand but cook it immediately, as frozen foods spoil quickly. However, you must add some time for cooking as it does take somewhat longer than it does when the meat is taken directly out of the refrigerator.

Other good ideas to aid in keeping your baby meat-happy are: Remember that chopped, scraped or ground beef should be cooked immediately after cutting, as it spoils much sooner than meat in one piece; keep ground meat, already cooked, in a tightly covered dish; meat broth, if it is in your baby's diet, should be cooked and cooled quickly and put in the refrigerator for use as soon as possible; keep bacon in a cool place, leaving the wrapper on to prevent drying and to hold flavor until ready for cooking.

Meats are an important part of your baby's diet, since they are immediate sources of the vitamin B complex, thiamine, riboflavin, and nicotinic acid, as well as of the minerals iron and phosphorus, and protein. Thiamine keeps your baby happy, gives him a beautiful skin and a healthy appetite. Riboflavin is especially needed by babies, as its lack causes blisters about the nose and mouth and extreme sensitivity of the eyes to light.

Eggs, too, are one of the most concentrated natural sources of many vitamins and minerals, and although they have not been rationed, it is well to conserve all their food values in cooking for your baby. Wipe spots from eggs with a rough, dry cloth but don't wash them before storing, as water destroys the outer protective film which keeps out odors.

Young mothers in the country or in the suburbs of such big cities as Chicago, New York or San Francisco are often frantic because gasoline and canned food coupons will not come out even. They say, "Yes, this rationing is all very fine, but how can I buy large quantities of canned goods on my infrequent trips to the city?" OPA gives two answers: First, by waiting until the end of one month, you can go to the grocery and use the allotted stamps for both the present month and the following month. Or, if you would like to purchase supplies for a still longer period of time, you may apply to your War Ration Board, stating your transportation difficulties or other inconvenience, and they will allow you to use the stamps for three or four months.

As to canned vegetables and fruits for the baby, OPA says the initial reason for rationing these items is not that babies are gluttons but that adults are. Therefore, in order to protect the baby population, OPA has set most pureed and baby food, soups, strained fruit mixtures and canned milk at one point a can; while chopped or so-called Junior foods are rated at two points a can.

Canned foods are now an indispensable part of American living, even for the baby. Graters, colanders and cooking for long hours are gone for mothers. Saving time in planning appetizing meals for infants is particularly important, of course, in families where there are other young children to be fed, clothed and cared for.

If your baby blows bubbles through her spinach as the small daughter of one doctor insisted on doing, you might follow her mother's plan and change her "greenery" food. Or if you have trouble with quantity in feeding your youngster, don't let rationing restrain him too much—and don't let his lack of table decorum worry you. One child allowed his carrots and beats to roll off his tongue if the amount was not sufficient to quell his

manly appetite—he couldn't be bothered with chewing such a small amount. His mouth had to be bulging before he'd use his new teeth.

Be kind to your ration points by using juices, such as fresh orange juice, which is rich in vitamin C, the well known preventive of scurvy. And, although your baby may get a large quantity of his needed vitamin D through his cod liver oil and milk, sun bathing is excellent for his health. This should be started with only a few minutes a day and gradually increased to half an hour or more. It will do much to prepare your baby for later good health.

Manufacturers are no longer turning out rubber soled shoes, rainy weather apparel, golf balls, tennis balls and various other household articles. Instead, they are turning their attention to the voluminous needs of the Army and Navy and the immediate needs of Mr. John Q. Public Jr. But the quantity is limited, and if you are able to get rubber articles or already have them for your baby, take good care of them. At present there is no pure rubber available for the baby unfortunate enough to be born during the war. But rubberized materials really seem just as serviceable for keeping him dry. Also, there are ways of cold patching and hot patching rubber articles like baby's panties, rubber bed sheets, hot water bottles and even buggy tires.

If you want to use the first method, buy a small tube of rubber cement, clean the worn or torn place on the article to be mended with cleaning fluid, roughen with sandpaper; then apply two coats of rubber cement on the patch and two on the worn place and let each dry a few moments. (If you are using an inner-tube patch, first peel off the cloth and then use two coats on the material to be mended and none on the patch.) Press the patch firmly into place and allow it to dry. You will find that your mended rubber goods will last and give good service.

Hot patching is similar to cold patching in the preparatory steps. The article to be patched and the patch itself are placed in position. Then a small tablet is lighted which gives off enough heat to vulcanize the patch.

When not in use, all baby's rubber toys, sheets, panties and bot-

Quality Survives

At the present time there are no restrictions on the sale of cosmetics. This means that you who use them and we who manufacture them are patriotically bound to observe a sensible self-control of supply and demand. Use your cosmetics conservatively. Buy only those products you need to keep your appearance looking its best. But don't neglect your appearance. A bright, cheerful, well-groomed appearance helps to maintain morale. Men on leave want their womenfolk — their wives and mothers and sweethearts—to be pretty and feminine. . . . We believe that we shall be able to serve you with Fine Cosmetics for the duration. While we may have to make some changes in our packages, we assure you that the quality of the products themselves will not be changed, unless it be for the better. Rather than lower the quality of a product we should abandon its sale for the duration. . . . We appreciate your patronage and seek to merit its continuance by a strict adherence to the motto of our organization, which is — "Quality Survives."

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Tampax was perfected by a physician and is used by many nurses—besides the millions of other women who have discovered it throughout the Americas and the other continents . . . Made of pure surgical cotton, compressed in dainty applicators. *Three absorbencies:* Regular, Super, Junior. Sold at drug stores, notion counters. Introductory box, 20¢. Economy Package lasts 4 months' average. Tampax Incorporated, Palmer, Mass.

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Please send me in plain wrapper a trial package of Tampax. I enclose 10¢ (stamps or silver) to cover cost of mailing. Size is checked below.
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tle nipples should be thoroughly cleaned and dried, and not allowed to remain near heat but kept in as cool a place as possible. Such articles as rubber sheets and panties should be put away with few folds and lightly sprinkled with talcum powder to keep the surfaces from sticking together. Baby's hot water bottle can be kept in excellent shape by keeping it well dried when stored; it may be patched as easily as other articles, but the patch must always be on the outside.

Rubber nipples should be kept scrupulously clean. First, milk should be washed off the nipples with cold water, as milk tends to soften rubber; then they should be sterilized. Wrap each nipple in a piece of gauze and place several at a time on a rack over boiling water. Cover and leave for five minutes. After removing them from the fire, cool as quickly as possible without taking the cover from the pan.

Rationing means simply that the children's food, clothing, toys and other articles of equipment must be carefully conserved. It takes plenty of the proper food and care to make a child into an adult who is healthy in both mind and body. Your government is trying to give all infants an equal chance at the materials available. It is your task to cooperate to the best of your ability.

GIVE ME MY THUMB

(To my Grandson)

I've had my food,
My bowl I drum,
I've billed and cooed,
Now where's my thumb?

At two o'clock
I always dine;
At six p. m.—
That thumb of mine.

Then mother tucks
Me into bed.
No bottle then,
My thumb instead.

When all is dark
And shadowy,
I want my thumb
To comfort me.

Though adenoids
Will surely come,
Just let me sleep.
Give me my thumb!

—Howard Dittrick, M.D.

Your Blood Test

(Continued from page 29)

types being designated numerically. Types are determined by the reactivity of the red cells under given conditions. Before a transfusion can be given, however, it is not only necessary to determine the patient's and the prospective donor's types, but also the technician must "cross match" the bloods to be certain of their compatibility. Before this procedure was routinely done prior to transfusion, many fatalities resulted from agglutination, or clumping together of cells, occurring when bloods of the same type were mixed without precautionary cross matching. Because two persons have blood of the same type, it does not follow that one is a suitable donor for the other.

The red blood cells contain iron, which is a very "reactive" metal. It unites with oxygen as the blood passes through the lungs, and releases the oxygen later along the blood's course of travel, wherever it is needed by the tissues. Have you ever wondered why you breathe faster when you run than when you walk at a leisurely pace? The body requires more energy when the pace is quickened, and therefore it must have more oxygen to burn the fuel to supply that energy. Thus the blood travels more rapidly, and hence the supply of available oxygen must be increased in the lungs. But first our freight train (the blood stream) must have enough cars (red blood cells) to carry the necessary oxygen to wherever it is needed. Persons with a low red cell count find themselves incapable of extensive exertion without becoming exhausted. Accurate methods for counting these cells—and thus determining the limits of physical activity within which one should remain—have long been in use.

The white blood cells are our scavengers. They ride along in the blood stream looking for stray bacteria. They are sometimes called wandering cells, and, like policemen, they are looking for offenders. Let us suppose that you cut a finger, and bacteria enter through the wound. Somewhere the alert is sounded, and reinforcements of white cells are sent out in the blood stream to destroy the enemy. They disentrain at the site of the wound and make battle. If you were to examine microscopically the pus which forms in such instances, you would find great numbers of these scavengers, many of them done to death in the battle. They fight valiantly to keep bacteria from embarking on the blood stream, for if they lose and the blood stream is invaded, death often ensues. The doctor can learn how the battle is progressing by counting the white cells in the blood. Thus by noting the forces which are being marshalled against invasion he has an index of the extent of the enemy's bacterial strength.

When something goes wrong with the organs which make the blood cells, both red and white, immature forms are thrown into the blood stream. In other words, the "factory" is at fault because it is called on to produce faster than its machinery can operate. The scavengers, for example, do not get a chance to grow into adults before they are called on; instead, they are sent out in swaddling clothes, so to speak. If the doctor examines the blood of these persons with faulty factories, he usually does not need to go further to determine what is wrong.

Thus the girl in the starched, white uniform, who may seem to you to be a species of blood hound and whom you may dislike for puncturing your arm or your finger, can make many analyses which aid your doctor in diagnosing and treating your illness. A "blood test" is not a singular thing, nor a needless routine. It is a cross section of life itself—of small factories, of chemical laboratories, of cafeterias and of soldiers on the march.

NOISE ABATEMENT

Pointing out that "injury, measurable and immeasurable, from noise such as now widely attends human life is real and not a matter for speculation," Carey P. McCord and John D. Goodell, Detroit, declare in a recent issue of *The Journal of the American Medical Association* that relief from noise is procurable.

Advice to New Mothers

CHOOSE NURSING BOTTLES THAT...

1. Help prevent colic.

Pyrex Nursers have the air-vent, preventing nipple-collapse. Milk flows steadily. Baby takes ample food with less effort.

2. Withstand extreme heat.

You know Pyrex brand glass is trustworthy! Take bottles from refrigerator to hot water without worry. No feeding delays. Sterilize Pyrex Nursers with complete confidence.

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FINE FURNITURE FOR CHILDREN . SINCE 1897

BE GLAD YOUR CHILD IS BRILLIANT!

By ROGER M. SHAW

Contrary to popular belief the brilliant child will also be superior physically and socially—if you give him a chance

EVERY FATHER has on innumerable occasions rested his chin on the rail of the baby's bed and dreamed fond dreams of his son's future progress—through childhood, adolescence and full maturity. He hopes his son will hold his own, be a leader in some sphere of activity and in general be a better man than his father ever was. There then comes to the truly virile and thoughtful father the awful thought that his son might be a child prodigy—a genius, a brilliant chap with horn-rimmed glasses bearing quarter-inch lenses, a sniffling bookworm, a weakling with nothing but a brilliant mind. Dad really wants, first of all, a real man for a son, a ball player, a leader of the neighborhood gang, a boy whom every girl in the community would be proud to date, a fine all-around fellow. If he is smart, so much the better—but what if he should be a real genius?

But on this score Father is worrying, as he so often does, about a woe that will probably never materialize—not that brilliant children are rare, for three children out of every hundred are destined to be technically brilliant people, but because the brilliant child need not be a myopic, self-centered weakling *if father does his duty by him.*

Usually, it's Dad and Mom and perhaps some supersolicitous teachers who, in all good faith, bring sonny to this wretched state. First of all, physical and social inferiority need not and should not be associated with intellectual superiority. Actually, the brilliant child is usually endowed with a tendency toward superiority in all respects. He not only has mental equipment superior to 95 per cent of his fellows, but, if properly handled by his chief supporters—Mom and Dad—he will tend to be superior in height and weight, rate of growth, traits of personality and character, social adaptation and degree of maturity.

Why does every one expect the genius to be a long-haired, antisocial misfit? Probably these extraordinary characters within the group of brilliant folk have been noticed because of their eccentricity, while those less warped but

brilliant have been too admirably human to catch our eye.

If it is true that the brilliant child tends to be superior in most other characteristics, why do we have the popular conception of the weakling genius? The answer is that if the brilliant child's mother and father had not been swept away by the first realization of their child's exceptional ability, if they had remained calm and reasonable during the months following this revelation, their child would in all probability have been as well rounded in physique and personality as the parents could desire. The brilliant child is betrayed by those who love him most when he

"Her *throat*, Jim...*and there's Diphtheria next door!*"

The baby should have been immunized against diphtheria before she was nine months old.

PROTECTION of little babies against diphtheria is simple and effective. Yet many mothers postpone immunization until their children reach school age—an extremely dangerous delay . . . because the highest death rate from diphtheria occurs among children under *five*.

Children should be immunized in *infancy*—not only against diphtheria but also against other serious contagious diseases.

If *your* baby is 3 months of age, he is old enough *now* to start the series of immunizations he will need for full protection. Don't put it off. Take him to the doctor *immediately*—today!

THESE ARE THE AGES *when your child should be protected . . .*

3 to 12 months is the right age for *smallpox* protection.

6 to 9 months is the right age for immunization against *whooping cough* and against *diphtheria*. In modern practice, *tetanus* immunization is often combined with the diphtheria inoculation.

After 18 months immunization for *scarlet fever* should always be considered if the "Dick Test" shows that your child is not naturally immune.

At 6 years or over. Immunization usually begins to wear off after about 5 years. So at 6 years consult your physician about re-immunization against *smallpox* and *diphtheria*. Ask also about protection from *scarlet fever* and *typhoid*.

At 12 years. Consult your physician again. Keep your child's immunization up to date.

Important for all ages. If your child did not receive the protection he should have had at an earlier age, see your physician immediately and have him immunized *now*.

Diphtheria could be controlled if all babies were properly immunized—yet a nation-wide survey shows that one out of every three mothers has never had a single child immunized against this disease.

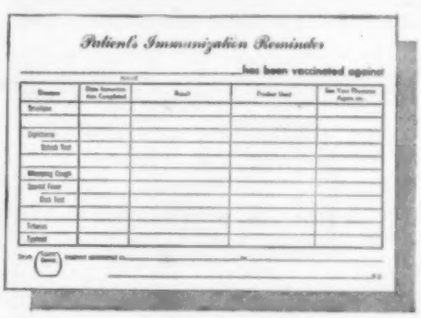
This card may save your baby's life!

Consult your physician *immediately* about the immunizations your baby needs *now*. At the same time, be sure to ask the doctor for an Immunization Record Card. Sharp & Dohme supply these cards to physicians free upon request.

This card will protect your child from the dangerous delays that may occur if you trust your own memory of the dates when he should be immunized or re-immunized.

It keeps track of your baby's immunizations . . . tells you when to take him back to the doctor for additional immunizations or re-immunizations.

Get this card from your doctor without delay—and keep it where you will be sure to consult it at least twice a year.


Patient's Immunization Reminder

has been vaccinated against

Disease	Date Immunization Was Completed	Result	Product Used	See Your Physician Again on
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Diphtheria Schick Test				
Whooping Cough				
Scarlet Fever Dick Test				
Tetanus				
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Doctor (Name) ... Address ... Tel. ...

Ask your doctor for this free record card. These cards are supplied by Sharp & Dohme to physicians only. A folder discussing immunization is available upon request to any interested individuals or groups. Write to Sharp & Dohme, Dept. H1, Philadelphia 1, Pa.

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Yes, Mothers, TUFFY-KAPS guard nipples against germs, odors or other impurities while bottles are stored. They slip on or off in a jiffy, can be sterilized with bottles, and they're *guaranteed forever against thermal breakage.* Buy at 2 for only 15c, in handy packages of six.

SAVE WITH TUFFY NURSERS made of heat-resistant glass

You can't buy better nursing bottles than TUFFYS. They're 2 for only 25c, so why pay more? Made of heat-resistant glass, *guaranteed forever against thermal breakage,* TUFFYS are the choice of thrifty Mothers, everywhere. They're easy for baby to hold, scientifically shaped for correct feeding, and simple to clean. TUFFYS and TUFFY-KAPS provide the perfect nursing bottle combination. Set of six TUFFYS and KAPS, only $1.20 at drug and department stores.

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is allowed to skip, or flit speedily through, two or three or more grades of school. No doubt he can do the work—with ease—but this acceleration puts him in classes of boys and girls who are possibly four or five years older than he. The disparity may not be apparent immediately, for the brilliant boy is superior physically and otherwise. He tends to hold his own during the period of close observation following his extra promotions. But this capacity is deceiving. He won't complain. He won't know what is the matter. But the tragic acceleration has been accomplished. He will begin to lose out in things social and physical.

In the elementary school he may not suffer too seriously, but when,

The brilliant child is likely to be well developed physically

later, his classmates enter adolescence, physically and emotionally, he who must wait three or four years more for the onset of puberty is brought face to face with the phenomenon of not being interested in girls, not experiencing the physical and social development that follows puberty. Your brilliant son finds that his classmates are no longer interested in the games of childhood. They think and talk about girls. They seem to have the drop on him physically. He has always held his own in the past. But now, as adolescents while he is still a child, they outstrip him in every activity—except in study and class work. Here he finds his only successful activity, and, humanly, he tends to do the thing at which he is successful; he therefore shuns things physical and social. Intellectually he plays with ideas with an originality and facility that puts his older classmates to shame, but this becomes his sole sphere of successful effort. He shuns social affairs, avoids physical competition, reads avidly and shines in class work. Without exercise in social and physical activities he becomes less and less adept than his classmates. He dons glasses, spends much time alone and generally becomes the reclusive, frail, timid genius that his Dad hoped he wouldn't be.

Why is this so? In most cases his parents have been overzealous in urging or condoning his acceleration in school. One grade skipped would probably work no injury, because he is superior to his "age-mates" in most traits—including intellectuality and physical development, social adeptness, personality and character. But when placed intellectually with classmates four or five years ahead of him—especially when they are technically adolescents and he a child—he can hold his head up only in things intellectual, and his rounded development is jeopardized. He becomes a bookworm because in that sphere alone is he able to meet competition. Were this disparity only a matter of months, his case might not become chronic and hopeless. But give him three to five years of social and physical inadequacy in late childhood and his doom is sealed.

How much better it would have been to keep this promising child with children his own age! Let him excel, as he probably will, in all spheres of activity when thus kept with his peers, and he'll be a boy, a youth and a man on whom Dad will look with pride. Don't dull his brillance by permitting him to flit through the work that occupies others of his age and thereby develop lazy work habits. Urge his teacher, whom he has undoubtedly distracted intellectually, not to favor excessive acceleration as a solution of her problem, but to give him twice as much work as the average student gets. He'll bear up under it with ease, especially if he can explore the enriched periphery of the elementary subjects at hand. And at the same time he'll play ball, lead a gang and be admired by every one.

If your child is brilliant—and he might be—be glad, but see to it that he grows up with the other children of his own age.

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THE LADY WITH THE PREWAR EYES

The lady herself has gotten into the fight. She left a comfortable home to tackle a vital job in a war industry.

But, much to her distress, her eyes remained home-bodies—good to look at but not to see with. For when she asked them to read a micrometer—they just *couldn't* do it. They quit cold by blurring and fogging, by straining and watering.

Worse yet, they brought on nerves, headaches, indigestion as well as backache and sleeplessness.

Involuntarily, these eyes even sabotaged that vital war work the lady was trying to do.

And no wonder. The health and efficiency of her eyes had been sadly neglected. *Now* she knew it, and *how* she knew it. The lady was ready to quit, too—until she sensibly brought her eyes up to date and into the fight.

Your eyes, like the lady's, have lots of ways of telling you they're not equal to your needs. Often, with symptoms seemingly unrelated to the eyes, they're telling you that something's wrong.

These warnings should be heeded promptly. Seek professional Ophthalmic advice and care. And get only the *best;* avoid the claims of charlatans and faddists. The only pair of eyes you will ever have are far too precious for you to skimp on their protection.

Good vision is a priceless asset to you, and to your country. Insure it by proper professional care.

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(page 73)

Announcing
The Arrival of
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MODERN METHODS OF CARE AND FEEDING AND A PERSONALIZED BABY RECORD BOOK

by LOUISE CRIPPS GLEMSER

What is more important than this blessed event and who deserves more attention than this bundle from Heaven who is now part of your plans for the future!

From October issue of "Hygeia": "This lovely book contains most of the answers to the doubts and questions of mothers—both expectant and actual, plus an excellent Baby Record Book, with all the usual headings for the recording of the baby's growth, and space for pictures."

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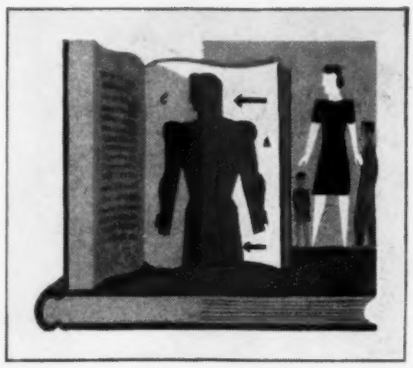

NEW BOOKS ON HEALTH

Maternal Overprotection

By David M. Levy, M.D. Cloth. Price, $4.50. Pp. 417. New York: Columbia University Press, 1943.

Dr. Levy, a physician distinguished in experimental and clinical research and a psychiatrist and psychoanalyst who has specialized in child behavior, has here enriched this field with a comprehensive and definitive monograph. The clinical material consists of the families of 20 children, aged from 4 to 16 years. The cases were selected from 2,000 records at the Institute for Child Guidance in New York City because the central problem in each instance was maternal overprotection. In a theoretical introduction to his study Dr. Levy emphasizes the importance of early maternal relationships in laying the groundwork for the child's ultimate personal and social adjustments, and reviews the different evaluations of this relationship in the various schools of modern psychology. The diagnostic studies at the Institute were broad, in that the pediatrician, the psychiatrist, the psychologist and the social worker pooled their efforts and special skills on each patient. Dr. Levy justly weighs the thoroughness and openmindedness of this method against the disadvantages of diffusion, divided responsibility and dangers of incoordinated and uneven teamwork in diagnosis, therapy and follow-up.

The data indicated that there are two types of "pure" maternal overprotection: dominant, with passive children; and indulgent, with aggressive children. Both types are characterized by the same criteria: excessive physical contact between mother and child, a tendency to "infantilize" the child and prevent its personal and social maturation, and finally, a lack of effective maternal discipline and control. The mother's overprotective attitude was found to transcend factors of nationality, economic status, position of the child in the family, "onlyness," the sex of the child, the age of the mother at the child's birth, and intercurrent illnesses affecting either the mother or child. Significantly, "Relatively few cases of marked paternal overprotection were found, although cases of paternal favoritism, shown usually to a daughter, are very common."

After a rather detailed statistical and tabular presentation of the various behavior patterns of overprotected children, Dr. Levy turns to perhaps the most valuable section of the work: a penetrating analysis of the parent-child relationships in his cases. From the standpoint of the mother, overprotection appears as an anxiety-ridden, obsessional neurosis, derived from her own infantile deprivations, and from later social, sexual and marital maladjustments. Nevertheless, in contradistinction to Freud, Dr. Levy believes that maternal behavior itself is as biologically elemental as the sex drive, and he cites animal experiments and clinical evidence to support this view.

In his final chapters Dr. Levy describes the problems presented by overprotected children—aggressive and tyranical behavior at home and in outside contacts, as opposed to generally good scholastic achievement and relatively few difficulties in psychosexual development. As to the comparative efficacy of the various "case work" methods of therapy, Dr. Levy states: "A distinct environmental change had a telling effect in a number of cases. Patients also spoke in retrospect about the value of separation from their mothers. Next in importance was specific advice and actual demonstration in the home. Least valuable was (purely verbal) psychotherapy"—

since in the latter case both mother and child, and often the father, resented the therapist's interference with the unconscious satisfactions each derived from the neurotic situation. The results of a minimum of two years of therapy in 19 cases were these: Only 2 cases showed "satisfactory" improvement, 9 showed partial improvement and 8 showed little or none. However, as the children became more mature and experienced during a follow-up period of from eight to twelve years, the group showing partial improvement increased to 15.

It would, of course, be easy to quarrel with some sections of the book—its occasional prolixity and belaboring of the obvious, its naive "statistical" approach to second and third-hand reports of the behavior complexities of only 20 cases, and even its paradoxical use of the term "pure maternal overprotection" to describe situations in which the mother "protects" the child from little more than normal development. On the whole, however, Dr. Levy's study—well organized, documented and indexed as it is—will prove of lasting interest to pediatricians, psychiatrists, educators, social workers and others interested in the physical, psychologic and social aspects of childhood adjustment. Unfortunately, according to Dr. Levy's own analysis of the neurotic resistance to insight and guidance in his patients, the person likely to benefit least by a perusal of this book would be the overprotective mother herself.

JULES H. MASSERMAN, M.D.

Tuberculosis—as It Comes and Goes

By Edward W. Hayes, M.D. Cloth. Price, $2.00. Pp. 187. Monrovia, Calif.: National Tuberculosis Association, 1943.

This is a handbook on tuberculosis and attempts briefly to cover the history of tuberculosis, its epidemiology, etiology, diagnosis, classification, prognosis and treatment.

The material essentially covers the point of view recognized by the National Tuberculosis Association, with slight personal variations indicating definitely that the writer is an "institution man" and somewhat conservative. Unnecessary verbiage is omitted, and a clear cut, simple evaluation of the therapy of tuberculosis is given—rather underemphasizing surgical measures.

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SMART EYEWEAR

Soul Medicine for Veterans

(*Continued from page 31*)

those facing operations. No stories are admitted which tell of characters vainly wandering from place to place in search of relief from tuberculosis, bronchitis or asthma. On the other hand, a story of Robert Louis Stevenson's courageous life might be an inspiration to a tuberculosis patient. In the veterans' library of today there are books in Braille for the blind, books in large, clear print, called "Books for Tired Eyes," and some books in foreign languages. There are picture books, puzzle books, game books, art books and bird books.

The third essential is an adequate, well lighted reading room. The furniture should be comfortable, as most of the readers are convalescents. In tuberculosis hospitals the sun porch is often used as a reading room.

The trained librarian, books with therapeutic value and a pleasant reading room make the hospital library, but it takes the readers to make it complete. Patients who have become contented and cooperative through their interest in reading are an inspiration.

Now that veterans of World War II are being admitted, librarians report a higher educational and cultural level than that which prevailed after World War I. There is a greater demand for books on economics, the professions, hobbies, aviation and travel. One reason is the general advance in educational facilities in civilian life, but librarians believe that many fathers of this generation acquired the reading habit in veterans' hospitals of World War I and went home determined that their sons should have better educational opportunities.

Here are some of the reasons given by patients for wanting to read: It helps them forget their pain; enables them to keep up with the outside world; helps them to prepare for an occupation; improves their education. From the doctor's point of view, the benefits of bibliotherapy are that the contented patient stays in the hospital long enough to receive maximum benefits; he profits by the replacement of destructive emotions with constructive thoughts; and he benefits from the exercise and change of environment given by going to the reading room.

A hospital superintendent tells of a mental patient who gradually became interested in crossword puzzles. He finally became so expert that he was encouraged to enter contests. He won many prizes and was finally discharged, cured. Another veteran, due for a long hospitalization, saw a writers' magazine on the rack. After reading it from cover to cover, he said to the librarian, "I've always wanted to write but never had time to try it." When she offered to bring him books on the subject, he was delighted. Before leaving the hospital he sold his first story.

A survey made by the library section of the Veterans' Administration Facility gave some interesting facts. Cards were sent to patients, and their replies were then classified at the central office into three groups: medical and surgical, neuropsychiatric and tuberculous patients. The first choice of all three groups was travel books. Since they cannot go places, the travel book provides a mental escape, allowing them, in imagination, to wander at will. The second choice was biography. Useful arts was the third choice of the surgical-medical group, with the neuropsychiatric readers taking fiction and the tuberculosis group choosing history. It was found that carefully chosen reading was more helpful in the neuropsychiatric group than in the others. Because of the longer term of hospitalization, the tuberculosis group showed the greatest educational response.

Librarians find that patients who have never read much may be gradually interested through picture magazines with short captions. Then books with short, illustrated stories are added. Bird and animal books, flower books and art books are useful introductions to the reading habit. Clever titles often catch the interest.

The libraries in two of the Veterans' Administration Facility Hospitals of the West are typical of many throughout the country. San Fernando, Calif., has a sunny location at the foot of the Sierra Madre Hills, away from ocean fogs. This makes it an ideal spot for a tuberculosis hospital. Tile-roofed stucco buildings set on the slopes of landscaped gardens give a Spanish air of restfulness to the veterans' hospital there.

Dorthea Glass, the librarian, visits each of the seven wards frequently. There are 350 patients, 90 of whom are ambulatory and come to the reading room of the library building or read on the sun porch. Last month the book circulation was 3,309—with 1,072 nonfiction books. In this nonfiction group travel stories led, with technical books a close second. Among the technical books, the emphasis was on aeronautics. The patients here are usually hospitalized for some time, and many of them do purposeful reading. The librarian's face glowed with enthusiasm as she told of some of the things her readers had accomplished. There is Bill, who had made photography his hobby. Then there was the patient who was moody and restless because he might never be able to carry on his former occupation. A friend had an opening in his real estate office which would require a real estate broker's license. Through the study of books provided by her, he passed the examination and took the position.

A few miles away, near the beach, is the Los Angeles Facility. It dates back to 1888, when the Pacific Branch of the National Home for Disabled Volunteer Soldiers was established near the village of Sawtelle, now a part of Los Angeles. This is an interesting station. Scattered over 700 acres are many of the sprawling old buildings, as well as the splendid new buildings of the Facility. The site overlooks the ocean; the rolling grounds are in their natural state. Mrs. Beatrice Klinkerman is the hospital librarian today.

Los Angeles is known as a "combined station." Many veterans make

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HYGEIA, The Health Magazine.

this their home and are domiciled in barracks. Then there is the military personnel quartered on the premises as a temporary war measure, and the hospital section.

The Domiciliary Library, with its big reading rooms, serves the resident members and the military personnel. It is the main library. In the new general hospital is the sunny, spacious reading room used by the patients. The staff reading room and library adjoins it.

Some of the things that add character to this station and its members are its proximity to the movie industry, oil wells and big aircraft companies. The reading interest of patients changes each day with the arrival of the morning paper. Another factor is the range in the age of the readers. The youngest is 17 and the oldest 100. There is also a characteristic vocabulary. Among the members, a Civil War yeteran is known as a "muzzle loader." Spanish-American War veterans are "bamboos." To the older veterans, the World War boys are "candy kids."

Occupational therapy in the form of book binding has produced some beautiful work. One unusual project was brought about by the request of a reader for all the material he could get on Australia. There was a file of *National Geographic Magazines* covering a period of over twenty years. These were taken apart and all the material on Australia bound in one book. The bed patient who had requested the material on Australia read the new book with great pleasure and remarked one day, "I lie here where I can lift my eyes from the magazine to the ocean. It doesn't take much imagination to forget I'm sick and think I'm where I'm reading about."

There is enough material left from the broken file of *National Geographics* to make volumes on sixty-two different subjects. Fifty-one have been completed. Among the subjects are books on fish, animals, birds, flowers, different countries and islands of the world and various states here at home. After visiting these stations and their libraries, you realize that while the recreational, educational and inspirational value of books has long been known, it is the hospital library which has effectively demonstrated their therapeutic value.

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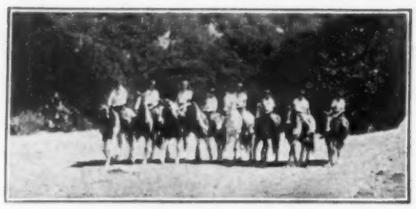

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Helpful suggestions for quiet amusements—illustrated. Prize letters reprinted from Hygeia. 16 pages—10 cents.

AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn St., Chicago 10, Ill.

A Doctor Looks at Medical Economics

(*Continued from page 21*)

There were those, even among the doctors, who thought that the medical profession should propose a plan of its own for the entire country. Experimentation still continues on the community, district, county and state levels. But, in the meantime, most of the original plans have not survived the acid test of actual trial. Here and there a plan has been successful, but in specialized and not general conditions. Experimentation still goes on.

With the onset of the war, more troubles came for the doctors. For a year before war was declared, the American Medical Association began, in cooperation with other medical organizations, the arduous task of the tabulation and classification of doctors. This was of the greatest value to the armed services, and when the government took over, it had a running concern.

The Army wants more doctors, industry wants more doctors, and the communities, hospitals and medical schools want to keep *their* doctors. Now, when moral suasion is used on doctors up to the age of 45 or 50 to enter the armed services, there is no ballyhoo press to bemoan the drafting of "Dad" doctors. But ask the doctor's wife who has four children and who sees the nondoctor neighbor not thinking of going to war, even though he may be younger, have only two children and more money!

Already a committee of the American Medical Association is at work on postwar planning. What is going to happen to these returning doctors who have had one to three years of service already, with the end not yet in sight? Many of the younger medical officers will not have had full intern training. Many of them will never have experienced actual doctor-patient relationships. Where will they fit in the postwar world?

There were hardships after World War I, when doctors came back after an interlude of usually a year, but it will be different and much worse this time. And there will be in addition the obligation of furnishing much of the medical education and medical training for the Axis dominated countries where medical systems have ceased to exist.

And now comes the new Wagner-Murray-Dingell bill. From a medical standpoint, the ideology so much publicized is unassailable: improvement of health of the nation, better distribution of medical service, and medical service of a superior sort to all the people—irrespective of ability to pay. The doctors have had these aims since the time of Hippocrates. This ideology is as new as the Golden Rule or the Ten Commandments. As one sound man comments on the plan itself: "It is too simple to be true." A beloved poet and philosopher of pure Irish extraction of my own town of Boston was fond of saying: " 'Tis a lovely theory and I'm all for ye, 'tis just the stinking facts that is again ye."

The American Medical Association has developed a new Council on Medical Service and Public Relations to look into this and kindred matters and to keep the doctors informed. In the meantime, the "docs" are fighting, in the armed forces and on the home front, the oldest thing in the world, the Dragon of Disease. The prodigious advances in medical science have furnished the doctor with new weapons for attack on the Old Dragon. The Dragon is getting groggy. The doctor, like a fighting army, needs training and plenty of the best equipment promptly, but not "too little and too late," to fight this wily Old Dragon who has many a foul and dangerous trick left. It is the doctor in the arena who furnishes the "blood, sweat and tears," whilst the spectators, noncombatant theorists and bureaucrats, sit in safe and comfortable seats and shout, "Hit him again, Doc! You can take it." The doctor can and will take it, but don't let him be crippled in his and every one's fight against the Dragon of Disease.

Some facts about Whooping Cough for parents with young children

How serious is whooping cough in babies, toddlers, and children of nursery school age?

When a child is over four years old, is the danger from whooping cough greater or less?

Do children over nine years old ever get whooping cough? Is it contagious?

Most parents underestimate whooping cough.

You probably don't remember much about the time when you had whooping cough.

You had some fever. If you were old enough to go to school, perhaps your teacher sent home a reader or an arithmetic so that you could "keep up" with your class.

Yes, you did some whooping, and during the night they lit a little lamp in your room. It smelled funny but it was supposed to keep you from coughing so hard. Before long, you were even allowed to play out-of-doors.

So, most of us are surprised to learn that whooping cough is often fatal.

For instance, in babies under one year old, whooping cough has caused during recent years almost three times as many deaths per year as measles, scarlet fever, and diphtheria combined.

In fact, in babies of that age who have caught whooping cough, *one out of four died.*

As children grow older, the danger from whooping cough becomes less and less.

It is much more serious in children under four years old than it is in children past that age.

After nine, it is rarely fatal.

But it should be remembered that these older children may transmit the disease to a baby brother, sister, or other youngster, and that may be a serious matter.

Fortunately, your doctor now has effective vaccines for protection against a number of the more important childhood diseases, including whooping cough.

Consult him about these modern safeguards. He knows what steps to take—and when to take them—to protect your children.

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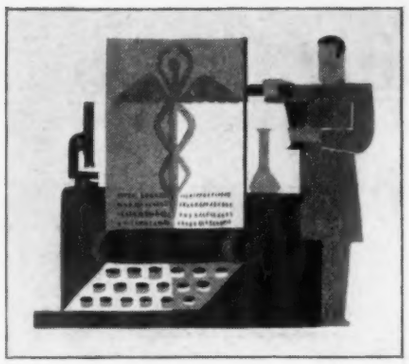

MEDICAL NEWS OF THE MONTH

Raise Funds for Infantile Paralysis on President's Birthday

The eleventh annual appeal for funds with which to fight infantile paralysis will be made to the American people January 14 to 31, inclusive, by The Celebration of the President's Birthday for the National Foundation for Infantile Paralysis.

In a recent letter to President Roosevelt asking his permission again to use his birthday, January 30, to mark the climax of the annual fund-raising appeal, Basil O'Connor, president of the Foundation, said: "Fortunately for all, there was widespread response to the 1943 appeal for funds, for infantile paralysis in epidemic form struck our country this year with a violence unequaled since 1931. The National Foundation's capacity and resources were tested as never before. Unquestionably the toll of the disease, as it ran its course in this epidemic, was materially less because we had a people better educated and better prepared to meet such an emergency. . . .

"So long as there is unavoidable wartime crowding and mass movements of people, the chances of epidemics are greatly increased. There must, therefore, be no relaxing in our persistent program of research, because some day it will lead us to the cause, cure and the prevention of this crippling disease. Research is the anvil on which we will forge the tools of victory. Sometimes it takes an epidemic to make us realize the necessity of slow, unspectacular, persistent research. . . ."

In his answer to Mr. O'Connor's letter, granting permission to use his birthday, President Roosevelt said: "The threat of this baffling, unconquered disease still hangs ominously over our vital war effort. There can be no armistice with the Crippler. Surrender of disease on the home front must also be unconditional. Now, more than ever before, we must keep up the fight against infantile paralysis until we learn the source of this disease and find a cure for it.

"As you say, for many of the 1943 victims the battle is just beginning. We must help them. And you can be sure that no American will fail to respond to a plea to help these boys and girls simply because the epidemic which struck them is abating. . . ."

Need for Nurses

Every graduate nurse in the United States must be used at the highest level of her skill in order to meet the critical need for nurses brought about by the war, *The Journal of the American Medical Association* declares in an editorial. A national registration of all graduate nurses in the country will be held the week of February 7 under the direction of the nursing division of the Procurement and Assignment Service of the War Manpower Commission.

Rabies-Contaminated Wounds

In experiments in which treatment of wounds contaminated with rabies virus was instituted within thirty minutes, only 11 per cent of guinea pigs treated with fuming nitric acid and only 6 per cent of those treated with soap solution became infected, compared with about 63 per cent infection of untreated wounds, Howard J. Shaughnessy and Joseph Zichis of Chicago reported recently. It should be emphasized that these results clearly show the necessity for using antirabic vaccination in addition to local treatment. The soap solution is preferred also because there is less scarring.

Controlling Common Cold Complications

Two reports indicating that it may be possible to control or prevent many of the complications of the common cold have been published recently. In one report, five Baltimore physicians present their findings in the use of a sulfadiazine spray to prevent the bacterial infections of the sinuses, the ears and the pharynx that so often follow the common cold. In another report, four California investigators present their findings from the treatment of the common cold and sinus and ear infections with sulfathiazole and another drug.

First Cases of Pinta in U. S.

The first three cases ever reported in continental United States of pinta, a nonvenereal type of spirochetosis (infection with a spirochete) limited almost exclusively to the dark races, are the subject of a report by E. P. Lieberthal of Chicago. There is no reason, the author says, why the disease should be limited to any country or even to the tropics. In all probability there are in the southern part of the United States persons with pinta which has been diagnosed as some other type of skin disease. The three patients he reports were born respectively in Canada, Louisiana and Alabama.

Chest Pain

What he believes to be a simple and effective procedure for relieving pain of pleural origin (from the pleura or membrane that surrounds the lungs and lines the chest) which is often associated with pneumonia is reported by Harry J. Price of Atlanta, Ga. This procedure, known as intercostal nerve block, involves injection of procaine hydrochloride into the nerves in spaces between the ribs over which definite tenderness can be elicited by slight pressure.

Chemical Burns

A phosphate solution for the treatment of chemical burns is reported by Eduard Poser and Erwin Haas of Chicago. It is composed of monobasic potassium phosphate and dibasic sodium phosphate dissolved in water. The two men point out that the customary treatment of chemical burns has definite disadvantages, particularly when such sensitive tissues as certain parts of the eye are involved.